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ABSTRACT

Investigated was the relationship of environmental education to ecological education, outdoor education, conservation education, environmentalized education, and general education. Goals selected from the literature were analyzed to obtain 60 goals representing each of the 6 areas. Using a Q-sort procedure, 65 selected individuals, representing the 6 areas, rank-ordered the goal statements. The resulting scores were analyzed using multivariate analysis of variance and one-way analysis of variance followed by Scheffe's Test. The results show that goals describing man's relationship to and utilization of the environment were ranked high by all groups. Goals describing specific subjects such as health, population growth, and outdoor science were ranked low by most groups. Personal data, education, and occupation related to the rankings of the environmental education and environmentalized education categories. A model developed to illustrate the relationship between the 6 groups is presented. The model shows environmental education overlapping the 5 other areas, with strong overlaps with conservation education and environmentalized education. (BT)

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ABSTRACT

A QUANTITATIVE COMPARISON OF ENVIRONMENTAL EDUCATION, CONSERVATION EDUCATION, OUTDOOR EDUCATION, ECOLOGICAL EDUCATION, ENVIRONMENTALIZED EDUCATION AND GENERAL EDUCATION BASED ON GOALS

By

David I. Johnson

The relationship of environmental education to established fields such as ecological education, conservation education, outdoor education, and new terms like environmentalized education has been confusing. This study was designed to evaluate the relationship of environmental education, ecological education, outdoor education, conservation education, environmentalized education and general education. Goals because of their long term perspective and internal development were chosen as a basis for comparison.

Goals selected from the literature were juried to obtain sixty goals representing each of the six areas. Using a Q sort procedure, 65 selected individuals representing the six areas, rank-ordered the goal statements into a quasi-normal distribution with scores ranging from

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+6 to -6. The resulting scores were analyzed using multivariant analysis of variance and one-way analysis of variance followed by Scheffe's Test.

Goals describing man's relationship to and utilization of the environment were ranked high by all groups. Goals describing specific subjects such as health, population growth, and outdoor science were ranked low by most groups. Environmental educators, environmentalized educators, and conservation educators ranked many of the same goals highest. The ecological education and the general education goal categories had a reliability coefficient of .8. Ecological educators ranked their goals significantly higher than all other groups. No differences were found between environmental educators, conservation educators, and environmentalized educators.

Personal data, education, and occupation most often influenced the rankings of the environmental education and environmentalized education goal categories. The courses that participants were currently teaching influenced the rankings of four goal categories.

A model developed to illustrate the relationship between the six groups showed environmental education overlapping the five other areas with especially strong overlaps with conservation education and environmentalized education. The uniqueness of ecological education, general education and outdoor education is also illustrated.

A QUANTITATIVE COMPARISON OF ENVIRONMENTAL EDUCATION, CONSERVATION EDUCATION, OUTDOOR EDUCATION, ECOLOGICAL EDUCATION, ENVIRONMENTALIZED EDUCATION AND GENERAL EDUCATION BASED ON GOALS

By

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CHAPTER I

INTRODUCTION AND LITERATURE REVIEW

Introduction

The year 1970 was a pinnacle year for the environmental movement. President Nixon's State of the Union Address emphasized environmental issues. The National Environmental Policy Act came into effect. On April 22, thousands marched, cheered, and smashed cars because people cared about the environmental future.

Americans historically have reacted to social movements by creating educational programs. Environmental concern was no exception. The Environmental Education Act was passed by Congress in response to environmental concern. The purpose of the act was:

> to encourage and support the development of new and improved curricula to encourage understanding of policies, and support of activities designed to enhance environmental quality and maintain ecological balance; to demonstrate the rise of such curricula in model educational programs and to evaluate the effectiveness thereof; to provide support for the initiation and maintenance of programs in environmental education at the elementary and secondary levels; to disseminate curricular materials and other information for use in educational programs throughout the nation; to provide training programs for teachers, other educational personnel, public service personnel, and community, labor, and industrial and business leaders and employees, and government employees at state, federal, and local levels; to provide for the planning of outdoor

> Ecological study centers; to provide for community education programs on preserving and enhancing environmental quality and maintaining ecological balance; and to provide for the preparation and distribution of materials by mass media in dealing with the environment and ecology (Public Law 91-516).

One year later the administrative structure authorized in the act had not been forged, and only $1.7 million of the authorized $5 million had been granted. But the act had supplied federal support and a definition for environmental education.

The definition supplied by the act was a major advancement in the emergence of environmental education as an education movement. Any educational movement has a history of theory development, hypothesis testing, and literary discussion attempting to relate the similarities of and differences between the developing movement and other spawning or related movements. During the late sixties and early seventies, environmental education was such a developing educational movement.

Writers attempted to relate environmental education to or distinguish it from established fields such as ecology, conservation education, and outdoor education. Even a new term such as environmentalized education was to be found in current journals. Confusion over these terms was pervasive among educators and the public. Much of this confusion still exists today.

In a step toward understanding the relationship of environmental education to ecology, outdoor education, conservation education, environmentalized education and general education, a study using identified goals from each of these educational groups was designed. The primary purpose of the study was to determine if each of the participating groups would rank their own goals highest when mixed with the goals of the five other groups; secondarily, to determine which goals were most important to all the groups, and lastly to determine if other demographic variables might influence goal selection. Accomplishment of these purposes would hopefully provide some insight into the relationship of the subjects involved and stimulate further research into the goals of environmental education.

Literature Review

Environmental Education and Conservation Education

Clay Schoenfield (1970) differentiated environmental education from conservation as indicated in Table 1. Other authors also have supported differences between environmental education and conservation education. The natural resources orientation suggested by Schoenfield was supported by Swan (1969) and Stapp et al. (1975). With the statement "Environmental education is not conservation education," Dr. George Lowe (1972) from the

TABLE 1

SOME DIFFERENCES BETWEEN ENVIRONMENTAL EDUCATION AND RELATED AREAS AS LISTED BY AUTHORS

Author	Area	vs	Related Area
Schoenfield	Environmental Education		Conservation Education
	Man-centered		Nature-centered
	Quality of the human experience		Quantity of natural resources
	Urban, open and rural area		Open and rural areas
	Man's today		Nature's yesterday
	Suspicious of growth		"Progress" oriented
Conservation Education Association	Environmental Education		Conservation Education
	Problem oriented		Resource oriented
	Political-citizen oriented		Technology, management and treatment
	Urban and community		Rural and small town
	Spans the curriculum		Science oriented
Swan	Environmental Education		Conservation Education
	Attitudes of concern for environmental quality and environmental problem solving		Concerned with the "basic" resources such as forestry, game and soil
Miller	Environmental Education		Outdoor Education
	Protecting, improving and saving soil, water, and other resources		Improving the quality of human lives
	Emphasis on content of subject matter		Setting for learning with no specific content
	Developed by people outside the education profession		Developed from inside curriculum by teachers
	Imposition on professional educators and school programs		No imposition
	Uses abstract learning tools rather than the real world		Uses "real life", direct and concrete learning experiences
Hungerford	Environmental Education		Outdoor Education
	Functions outside the classroom		
	Value laden		Greater scope than Environmental Education
	Produces environmentally literate citizens		
	Interdisciplinary		

United States Office of Environmental Education also supported the difference.

A parental relationship between conservation education and environmental education is suggested by Rillo (1974) when he stated that, "Environmental education is a term that has recently emerged from a chrysalis known as conservation education and outdoor education." The definition of conservation education is, "The study of man's intelligent use of his natural environment through the development, management, preservation, and renewal of natural resources for his material, cultural, and aesthetic needs to benefit present, and future generations" (Conservation Education Association 1970). In opposition to Schoenfield's opinion, this CEA definition seemed man-centered, futuristic and quality-oriented. But this definition could be the result of a convergence of conservation education and environmental education.

Historically, similarities between conservation education and environmental education were evident. Three decades ago, conservation educators desired conservation to be multidisciplinary. "Every teacher in every grade, in every subject, has unlimited opportunities to teach conservation" (Fink 1942). The main objectives expressed by Ollie Fink (1942) were as follows:

1. Insight into the nature of the world, the interrelationship of man and other forms of life and the physical world;
2. Information, habits and attitudes conducive to health;

3. Growth through a variety of purposeful scientific experiences;
4. Emotionalized attitudes toward the natural environment and its interrelationships;
5. Ability to solve problems through an examination of evidences;
6. Willingness to act intelligently upon the basis of best evidence;
7. A sense of social responsibility.

Even at this fairly early point in conservation education, as a discipline it seemed based on ecological ideas, public and individual health, experiential education, attitudes and values, problem solving, citizenship, and the future -- all with a man-orientation. Many of the words now used to describe environmental education were found in "Conservation for Tomorrow's America", but the textual emphasis concentrated on renewable and non-renewable resources.

Environmental Education, Outdoor Education, and Conservation Education

As quoted earlier, Rillo (1974) implicated outdoor education in the development of environmental education. The Conservation Education Association agreed in the statement, "Understanding the natural world is a goal common to outdoor education, conservation education, and environmental education" (CEA 1970). Swan (1969) also supported the idea that outdoor education and environmental education have some common goals.

The relationship between conservation education, outdoor education, and environmental education has been explained by the National Education Association in this way:

> Environmental education has recently been undergoing new developments. To the familiar concepts of outdoor education and conservation education have been added new concerns with pollution and human ecology. Long established areas of study, such as nature study in the lower grades and sciences in the upper grades, social studies, history, and geography have been placed in a new light when viewed as different aspects of the complex interrelation of man and his environment.

Quantitatively, the three educations - conservation, environmental and outdoor were found to be related by B. Ray Horn (1969). When he factor analyzed the response to the term "outdoor education" by the American Association of Health, Physical Education and Recreation's Council on Outdoor Education, three different response groups were identified: an environmental oriented group, a conservation oriented group, and an outdoor activities oriented group. Philosophically and quantitatively many authors have agreed that conservation education, environmental education, and outdoor education have historical relationship. The differences between environmental education and outdoor education as stated by Miller (1971) and Hungerford (1975) are summarized in Table 1.

Environmental Education and Ecological Education

The relationship between ecology, science, and environmental education has been brought to question also by Hungerford (1975) and Rillo (1974). Hungerford believed the differences between ecology and environmental education were related to values. Hungerford concluded

that ecology has been a science and therefore has not been value laden; however, environmental education has been naturally value laden. A differentiation from science was also mentioned by Pillo (1974):

> Environmental education should not be interpreted as being the same as environmental science. Environmental science can lay claim to a specific body of knowledge and concerns itself with the monitoring of environmental conditions and the application of scientific knowledge to the solution of those environmental problems. Environmental education is aimed at producing an environmentally literate citizenry. It is interdisciplinary in approach and cuts across many departmental boundaries and disciplines.

Dr. Arnstein (1971) addressed the same question from a different perspective; "There are those who think environmental education surely must have scientific content." After describing briefly the Science Curriculum Improvement Study (SCIS), he further explained this idea: "This is science education; it is part of environmental education, and it also contains welcome elements of reform of educational methods and techniques."

Outdoor Education, Ecological Education and Conservation Education

In Outdoor Education--Its Origin and Purpose, Kirk (1968) suggested that conservation was the major purpose and contributor of outdoor education. That idea was evident in his definition of outdoor education:

> Outdoor education is the method which utilizes the out-of-doors to cultivate a reverence for life through ecological exploration of the interdependence of living things, one on the other, and to form a land ethic illustrating man's temporary stewardship of the land (Kirk 1968).

Kirk's definition included the traditional outdoor education definition: "The method which utilizes the outdoors," plus ecology: "ecological exploration of the interdependence of living things," and conservation education which has been defined as "the cultivation of a reverence for life and the formation of a land ethic."

Environmentalized Education

The site and the methodology of the educational process has been a strong current flowing through all the definitions discussed. More recently a different line of thinking called "Environmentalized Education" has emerged. The source of this term was the following qucte by Noel McInnis (1972). "What we need, before we produce more education materials, is a new education strategy. We need to environmentalize education, to make education environmental in essence, rather than merely in content."

According to Dr. McInnis' thinking, environmental education has been education which maximized the learner's interaction with "environments and facilitates the organisms' ability to function in that environment." The teaching strategy aspects of environmentalized education are illustrated by this statement: "Education is most environmental when you are learning with your environments as well as about what they consist of." In this statement the emphasis of McInnis has been that the individual must learn with the changing environment.

Therefore the procedure by which an individual learned or interacted with his environment as well as where that interaction occurred have been important in environmentalized education.

Procedures which McInnis believed important were those, 'dynamics common to other environmental processes;" to teach environmentally one teaches "with" knowledge and environments rather than "at" students about environments (McInnis 1972).

In environmentalized education, environment seemed to have a more comprehensive definition. This environment included the person, his/her immediate surroundings, community, planet, and universe. Understanding each person's place and the functional relationship from the immediate environment to ultimately the universe, but in particular the planet seemed to be the primary goal. When the world has been perceived as a gestalt, then people have been truly "environmentalized" and have been environmentally educated.

Summary

In summary, between environmental education and conservation, the primary difference was man versus resources. In environmental education, the quality of man's environment, both present and future with special emphasis on present problems had priority whereas in conservation education the biotic and physical resources used by man were of priority. Outdoor education is

delineated from environmental education and conservation education by concentrating on the outdoors as a quality educational experience for the school learner. Differences or similarities between the other three component groups in this study have not been clearly identified in the literature.

A review of pertinent literature advocated potential differences between the various educations, but the same literature suggested much similarity also. Could it be that stated philosophical differences never existed or could it be that real differences have existed and could have been measured? Assuming the differences can be measured, which of the many educational planning components might best measure the differences? Would goals, objectives, behavioral objectives, or needs best measure the differences?

Goals, Objectives and Needs

After much consideration, goals were selected as the dependent variable. The goal setting process is considered one of the most important aspects of educational development, and goals are considered one of the most important components of educational programs as illustrated in Education in Focus: A Collection of State Goals for Public Elementary and Secondary Education (Zimmerman 1972):

> Goals, when developed through the cooperation of educators and citizens first serve to communicate clearly the responsibilities and purposes of education.

> These broad purposes, when further translated into performance objectives are the standards against which the present status of educational needs can be determined. Changes in program emphasis through reallocation of human, physical and financial resources in meeting these needs then can be systematically initiated in light of the specific purposes they are intended to serve. Finally, it is by reference to stated goals and objectives that progress and attainment can be most meaningfully reported to all groups and individuals concerned with education.

As stated in the previous quote, goals have communicated the purpose or direction (Hutchinson et al. 1973) that an "education" is striving to reach. This general direction should be determined and developed by the participants who will be attempting to achieve the stated goals. Since these goals are the comparison criteria for the success of the program or process, and will determine how resources will be spent to accomplish the stated purposes.

When numerous goals have been identified, a priority sequence becomes expedient if the "desired" outcomes are going to be achieved. Blackwell (1973) described the priority sequence as goal structure when she said, "A goal structure is the entire set of goals, which are ordered according to priorities, and which have particular needs, seem as essential for their outcomes assigned to them."

In the initial quote, objectives and needs were mentioned. These two words should be differentiated from goals. Usually, an objective has had a more specific contribution to the accomplishment of the longer range goals.

An objective definition has been designed by the Mississippi Department of Education (Hutchinson et al. 1973) as including six variables determined by the following questions:

1. Of whom is the behavior expected?
2. What behavior is desired and/or is expected to occur?
3. To what instructional variable will the behavior be related?
4. How will the behavior be specifically measured?
5. What is the expected proficiency level?
6. What is the time needed to bring about the expected behavior?

Answering these questions could provide a precise description of the desired behavior. Objectives, though different from goals, are related because it has been necessary for the more specific objectives to move the individual or institution toward goal accomplishment.

Goals have also been confused with needs. "Needs of education refer to a perceived lack or deficit in education or something that, if withdrawn from the educational system would lead to a perceived lack or deficit" (Blackwell 1973). Or needs have been used to isolate difficulties in the goal structure or the objective structure. Also, goals may have been written to meet a perceived need.

The long term perspective of goals rather than the immediacy of objectives or the void of needs should quantitatively show differences between the six educational components of this study, if a difference exists.

Since goal development is an internal process by the associated members, goals should be a suitable measure for the beliefs regarding the purpose, direction or intent of the group in which they participate.

CHAPTER II

METHODS

Development of the Test Instrument

Figure 1 is a diagrammatic summary of the methods that were used in the completion of this research study of goals. The test instrument that was used in this goal study was created by reviewing literature to obtain representative goal statements. Thirty statements for each six subject areas: conservation education, ecological education, environmental education, environmentalized education, outdoor education, and general education were selected, modified slightly to maintain parallel sentence structure, and typed on 3 x 5 cards for convenient handling.

To establish content validity, ten specialists in each of the six categories were asked to rank order the thirty goal statements from most important, ranked number 1, to least important, ranked number 30. Participants in the rank ordering process were selected on the basis of their participation in professional organizations, professional occupation, or by recommendation of another person in their same specialty category. Each participant received a cover letter requesting his/her help, thirty goal statements on cards, and

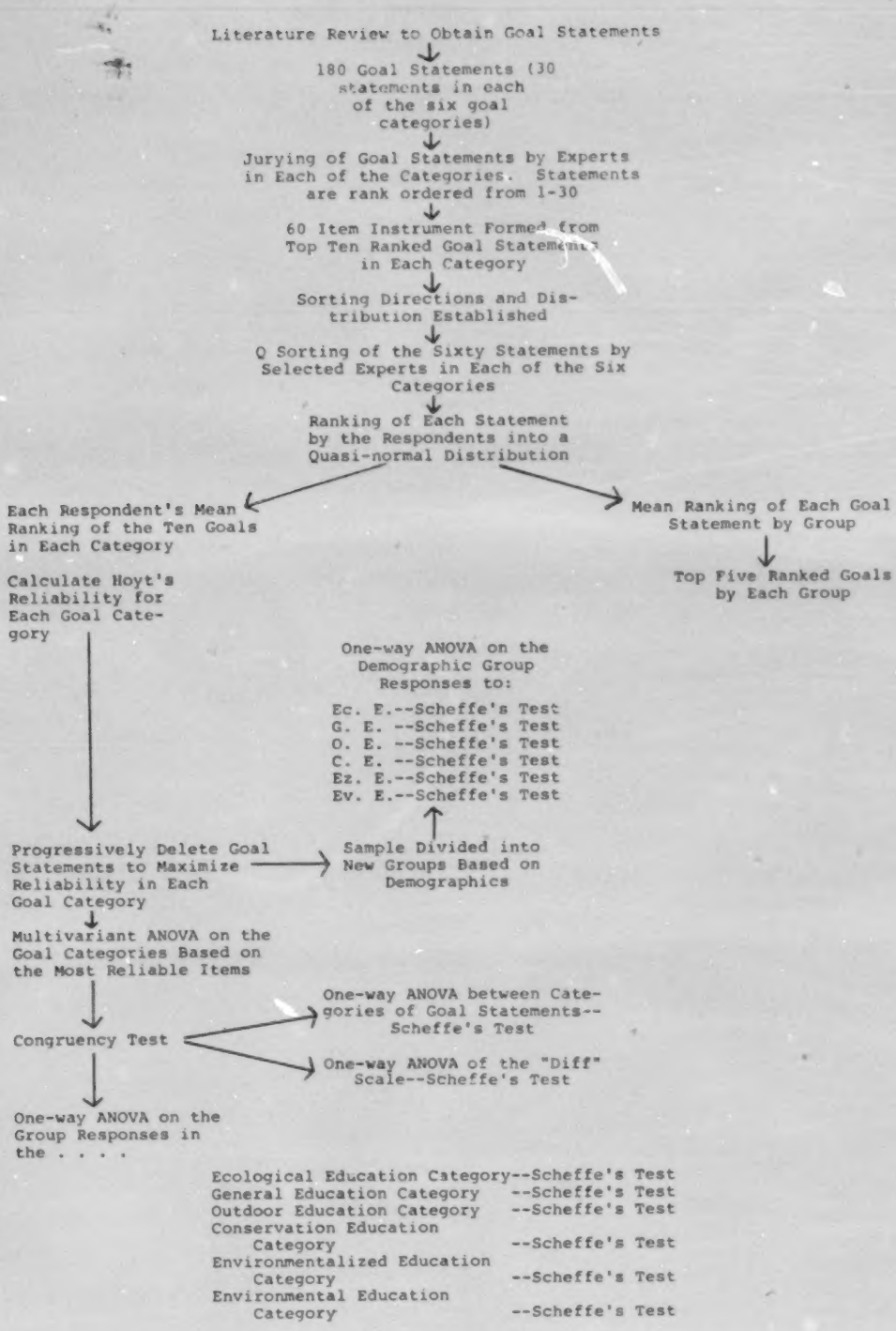

Literature Review to Obtain Goal Statements
180 Goal Statements (30 statements in each of the six goal categories)
Jurying of Goal Statements by Experts in Each of the Categories. Statements are rank ordered from 1-30
60 Item Instrument Formed from Top Ten Ranked Goal Statements in Each Category
Sorting Directions and Distribution Established
Q Sorting of the Sixty Statements by Selected Experts in Each of the Six Categories
Ranking of Each Statement by the Respondents into a Quasi-normal Distribution
Each Respondent's Mean Ranking of the Ten Goals in Each Category
Calculate Hoyt's Reliability for Each Goal Category
Mean Ranking of Each Goal Statement by Group
Top Five Ranked Goals by Each Group
One-way ANOVA on the Demographic Group Responses to:
Ec. E.--Scheffe's Test
G. E. --Scheffe's Test
O. E. --Scheffe's Test
C. E. --Scheffe's Test
Ez. E.--Scheffe's Test
Ev. E.--Scheffe's Test
Progressively Delete Goal Statements to Maximize Reliability in Each Goal Category
Sample Divided into New Groups Based on Demographics
Multivariant ANOVA on the Goal Categories Based on the Most Reliable Items
Congruency Test
One-way ANOVA between Categories of Goal Statements--Scheffe's Test
One-way ANOVA of the "Diff" Scale--Scheffe's Test
One-way ANOVA on the Group Responses in the . . . .
Ecological Education Category--Scheffe's Test
General Education Category --Scheffe's Test
Outdoor Education Category --Scheffe's Test
Conservation Education Category --Scheffe's Test
Environmentalized Education Category --Scheffe's Test
Environmental Education Category --Scheffe's Test

Figure 1. Flow Diagram of Research Methodology

instructions to facilitate the rank order procedure (see Appendices A and C for a listing of statements, cover letter and instructions). The rankings from all participants in each of the six categories were summed. Those 10 statements that received the highest ranking (lowest total score for each of the six subject areas) were considered the most important goals in the six subject areas and were combined to form the testing instrument used.

Process of Data Collection

To determine if the experts representing the six subject areas would differentiate their goals from the goals in the other five fields, a Q sort was used because it was more efficient in handling larger numbers of items and tended to emphasize the top and bottom ranked items while deemphasizing the more neutral items. Generally, the participants involved in a Q sort rank order piles of statements or objects along a continuum according to set instructions. The number of cards in each pile is arranged to form a normal or quasi-normal distribution for statistical convenience. From this arrangement, several dependent variables may be obtained including average scores for each statement, intercorrelation of statements, or intercorrelation of subjects. These data can then be analyzed using analysis of variance or factor analysis to determine the relationships between each person

or groups of people and their distribution of the items (Kerlinger 1964, Stephenson 1953).

In this Q sort procedure, the participants were asked to place the card numbers of the sixty goal statements into a quasi-normal distribution ranging from a +6 to a -6. Two goal numbers were placed in the +6 and -6 ranks, three goals in the +5 and -5 ranks, four goals in the +4 and -4 ranks, five goals in the +3 and -3 ranks, and then six goals in each of the seven remaining ranks (See diagram in Appendix C). To assist in completing the diagram, the goals were first to be subdivided into three piles: a most appropriate goals' pile, a most inappropriate goals' pile, and an undecided pile. Each of the three piles were then sorted on to the distribution diagram beginning with the most appropriate, then the most inappropriate pile, and lastly, the undecided pile. Before the undecided goals were recorded on the diagram, the participants were asked to circle or outline the undecided goal squares. Participants were encouraged to change the placement of the goals until they were satisfied.

The Sample

For this Q sorting procedure, participants were selected on the basis of their participation in professional organizations, professional occupation, or by recommendation of another person in the same category. A list of representatives was solicited from a recognized leader in

outdoor education and a recognized leader in environmentalized education for use in both test construction and data collection. Some participant overlap occurred between test construction and the actual data collection in the four other areas also. All participants in ecological education and general education were faculty members of Michigan State University. All others were from a variety of geographical locations. Since the general education group was to serve as control, particular care was taken to balance the group with people from the natural sciences, social sciences, arts and letters, and education. A minimum of ten people per group was set.

The participants were contacted by telephone or by an office call. Each person was informed of the purpose, the procedure, the time required and if appropriate, who recommended their participation.

If an affirmative answer was received, the test package which contained a cover letter, the sixty goal statements, instruction sheet, demographic data sheet, distribution diagram and post-paid return envelope was sent to each participant. If the material had not been returned by the deadline, a follow-up package was mailed which included a self-addressed envelope and a request for a response. If no response was received, another follow-up call was placed to the individual. Contacts were made until the minimum of ten people per group was met. A total of 65 people ultimately responded.

Experimental Design

The goal statement instrument had ten items in each of the six categories: conservation education, ecological education, environmental education, environmentalized education, outdoor education and general education for a total of sixty items. To sort the goals, representatives from each of the same six categories were selected. (Hereafter referred to as ecological educators, conservation educators, etc.) The instrument and sample design resulted in a two-way (factorial) structured Q sort (Kerlinger 1964), a design well suited to the use of analysis of variance.

Analysis

After accumulating 65 responses, the Office of Research Consultation at Michigan State University assisted in developing the analytical procedure, the data preparation, and the computer programming. The analysis consisted of reliability testing of the instrument, multivariant analysis of variance using repeated measures and univariant analysis of variance across groups and across measures. All analyses of variance tests were followed by Scheffe's Post Hoc Comparisons. Analytical procedures were completed using the Statistical Package for Social Science (Nie et al. 1975) and the Finn Program (Finn 1967).

To determine if differences might exist between individuals, other than along group lines, a demographic questionnaire gathered information on sex, age, degrees, majors, minors, school of highest degree, present occupation, political orientation, hobby and recreational interests, and affiliations. If teaching as an occupation was specified, additional questions on subjects now teaching, years teaching, levels of educational experience, and other subjects taught were asked. If categories were not specified on the questionnaire, response categories were created a posteri for analysis.

To determine if demographic variables influenced goal orientation, the 65 respondents were reclassified into new groups based on their response to the demographic questionnaire. The new groups within each of the fourteen demographic variables were then compared on their mean responses to each of the six categories of goal statements. The means were analyzed using a one-way analysis of variance followed by Scheffe's Test for the Homogeniety of Variance when significant differences between means were found.

Each of the ten goal statements in the six categories were first tested for reliability to determine which statements were contributing to the underlying constructs of each successive scale. The purpose of the reliability procedure was to remove those test items that were responded to randomly. If the items were being

sorted randomly, then those items were not consistent with the philosophical basis for that scale and would not serve as good indicators of differences in group responses. Reliabilities for each of the six scales were estimated using Hoyt's Test. Items were progressively deleted in successive computer runs to maximize the reliability in each of the six scales.

The reliable item scores in each category were then averaged within that category (i.e., the item responses were added and then divided by the number of items in each scale). Each individual or subject then had six scores which were the mean of the responses to the reliable items in the six categories.

Two additional scales were created to assist in later analysis. The first scale, the congruent scale, was the same score that the respondee made in the category which corresponded to his group (e.g., conservation educators--conservation education scale, general educators--general education scale, etc.). The second, incongruent scale, was then created by averaging the scores on the remaining five scales which did not correspond to the group;

e.g., Conservation Educator Incongruent Score =

$$\frac{\text{Environmental Educ. Scale Score}}{5} + \frac{\text{Environmentalized Educ. Scale Score}}{5} +$$

$$\frac{\text{Ecological Educ. Scale Score}}{5} + \frac{\text{Outdoor Educ. Scale Score}}{5} +$$

$$\frac{\text{General Educ. Scale Score}}{5}$$

After reliability testing, the data was orthonormalized to obtain good ANOVA assumptions. Then a multivariant analysis of variance was used because that procedure would be particularly sensitive to all the potential relationships or interactions within the design. An F-Ratio for Multivariant Test of Equality of Mean Vectors was used for testing significance.

The multivariant analysis was followed by a method using the congruent and incongruent scales for comparing any one group with the remaining five groups. By subtracting the incongruent scale (the average from the remaining five categories) from the congruent scale, (the average score in the category which is the same as the group designation), a new variable entitled "Diff"was created. This new variable was then tested using a univariant one-way ANOVA to determine differences between the two scales and also to determine if the groups were significantly different on their "Diff" scores. Scheffe's Post Hoc Comparisons followed to determine the contributions to overall significance.

All six groups were then compared on their mean ranking in each of the six categories. A univariant one-way ANOVA was computed across all groups in each of

the six categories. If significant differences between groups were found, the differences were explored using Scheffe's Post Hoc Pair-Wise Comparisons for the Test of Homogeniety.

CHAPTER III

RESULTS

Sample Demographics

In a study that is not based on a random sample such as this one, the population description becomes exceptionally important. Random selection in a study provides a more universal application of the results. The non-random study requires that the reader must have adequate information about the population in order to make application of the results. This information has been provided in Tables 2, 3, and 4, and described in three sections entitled personal data, education, and occupation description and teaching experience.

Personal Data

Ninety-two percent of the participants were males (Table 2). Two-thirds of the people interviewed were between the ages of 40 to 60 years. Conservation educators, members of an old and well-established field, had all respondents in the 50 and older age brackets. Politically, 49 percent of the participants were moderates, and 37 percent perceived themselves as liberals. The remaining were equally divided between very liberal and conservative.

TABLE 2

PERSONAL DATA

Group	Sex		Age					Political Orientation					Organizations & Societies						Recreational Interests				
	Male	Female	20-30	31-40	41-50	51-60	61 and Up	Very Liberal	Liberal	Moderate	Conservative	None	Professional Societies	Professional Education Societies	Naturalist Societies	Conservation Societies	Environmental Organizations	Honor Societies	Athletic	Outdoor Non-athletic	Artistic-Aesthetic	Indoor Non-athletic	Other
Conservation Educators	12	-	-	-	-	8	4	-	6	4	2	-	7	7	5	8	1	1	3	19	4	1	-
Ecological Educators	11	-	-	4	3	3	1	-	-	11	-	-	11	-	6	-	-	8	11	23	6	1	-
Environmental Educators	7	3	2	3	2	2	1	-	3	7	-	-	7	7	4	3	-	4	15	15	3	5	2
Environmentalized Educators	9	1	2	4	3	1	-	1	4	2	1	2	5	5	2	2	2	-	8	10	-	3	5
Outdoor Educators	11	-	-	2	4	3	2	2	4	4	1	-	10	9	-	-	1	-	8	21	-	2	-
General Educators	10	1	-	2	7	2	-	3	-	-	6	2	7	8	1	-	-	-	12	9	8	3	-

TABLE 3

EDUCATION

Group	Degrees Earned			Major in Terminal Degree			Minor in Terminal Degree			Geographical Location of Graduate Schools		
	Bachelors	Masters	Doctorate	Natural Science	Education	Other	Natural Science	Education	Other	East	Mid West	Far West
Conservation Educators	-	5	7	3	2	7	6	1	4	4	8	0
Ecological Educators	-	1	10	11	-	-	10	-	1	4	5	2
Environmental Educators	1	3	6	2	5	3	1	1	8	1	8	1
Environmentalized Educators	2	6	2	4	3	3	4	2	4	4	4	2
Outdoor Educators	-	3	8	-	6	5	-	2	6	2	8	1
General Educators	-	-	11	3	4	4	2	2	7	1	11	0

TABLE 4

OCCUPATIONAL DESCRIPTION AND TEACHING EXPERIENCE

Group	Professor	Teacher	Administrator	Other	College Only	College and High School	Other	Mean Teaching Experience in Years (Standard Deviation)
Conservation Educators	11	-	-	-	3	4	4	30.09 (S.D. = 9.08)
Ecological Educators	10	-	-	1	11	-	-	14.45 (S.D. = 9.60)
Environmental Educators	4	1	5	-	-	1	7	18.33 (S.D. = 3.44)
Environmentalized Educators	1	4	4	1	1	1	6	15.14 (S.D. = 10.54)
Outdoor Educators	7	-	3	1	-	-	9	27.60 (S.D. = 10.97)
General Educators	7	-	1	3	3	-	8	19.20 (S.D. = 8.15)

Professional subject area societies (37%) and professional education societies (28%) dominated the organizations and societies. None of the ecological educators belonged to professional education societies.

Outdoor non-athletic activities (49%) such as hunting, fishing, and camping were the predominant recreational interests followed by athletic activities at 29 percent.

Education

Two-thirds of the participants had earned a Ph.D. Most of the others had earned Master's Degrees. Only one group, environmentalized educators, did not fit this pattern because 60 percent had Master's Degrees.

Majors were divided between science (35%), education (31%), and the other category (34%). Two groups did not conform to this pattern. Outdoor educators were predominantly (73%) education majors, and ecological educators were all science majors. Forty percent of all minors were in science, and only 14 percent were in education.

Sixty-eight percent of the respondents graduated from Midwest colleges and universities. An additional 23 percent were from the East, and the remaining 9 percent graduated from schools in the Far West. Thirteen individuals (20%) graduated from Michigan State University.

Occupation

The majority (62%) of the respondents were professors in colleges and universities. Twenty-two percent were administrators of programs related to their group. Only 8 percent were teachers in the public school sense. An additional 8 percent were either combinations of the three categories or would not fit into any of the other categories.

The majority (48%) of the participants had from 16 to 30 years teaching experience; 28 percent had from 5 to 15 years experience, and 21 percent had more than 30 years experience. Only 3 percent had less than 5 years experience.

The grade levels at which the participants had taught in this study were extensive. Only 31 percent of those now teaching had taught only at the college or university level. Only the ecological educators had taught only in colleges or universities. On the other hand, outdoor educators had taught in virtually all levels of education. The remaining four groups had a variety of experiences at a variety of grade levels.

A diversity of subjects was being taught by the general educators. Those subjects included the general categories of English and literature, humanities, social science, natural science and education. Environmentalized educators also displayed a large variety of courses being taught. In direct opposition to the diversity of subjects taught

by the previous two groups of educators, were the ecological educators who taught totally pure or applied science subjects which were related to their majors and minors. Only two ecological educators identified courses entitled ecology. The other participants had, however, taught applied ecology or an understanding of ecology was prerequisite for the subjects they were teaching.

The remaining three groups were unique in courses presently being taught. Outdoor education was the only group in which five of the respondents were teaching the same subject as their category name. Two outdoor educators taught environmentally-oriented courses. Four conservation educators were teaching conservation, but four were also teaching environmental education, and one was teaching outdoor education.

Subjects previously taught were predominantly science courses. Within the sciences, biological science was the most frequent of the sciences listed. The general educators had taught 11 science courses, 9 social science courses, and 6 different education courses, a much broader range than the other groups.

TABLE 5

THE RELATIONSHIP BETWEEN DEMOGRAPHIC VARIABLES AND CATEGORIES OF GOAL STATEMENTS

Demographic Variables	Goal Categories					
	Ecological Education	Conservation Education	Outdoor Education	Environmental Education	Environmentalized Education	General Education
Personal Data						
Sex	-	-	-	-	-	-
Age	-	-	-	-	-	-
Political Orientation	-	-	Yes	-	Yes	-
Recreation Interests	-	-	-	Yes	-	-
Professional Societies	-	-	-	Yes	Yes	-
Education						
Degree	-	Yes	-	Yes	Yes	-
Major	-	-	-	Yes	Yes	-
Minor	Yes	-	-	-	-	-
School of Graduation	-	Yes	-	-	-	Yes
Occupation						
Present Occupation	-	-	-	-	-	Yes
Number of Years Teaching	-	-	-	-	-	-
Grade Levels of Experience	-	-	-	Yes	Yes	-
Subjects Now Teaching	Yes	-	Yes	Yes	Yes	-
Subjects Previously Taught	-	-	-	-	-	-

Underlining indicates a significant F Test between mean responses of the demographic variable groups to that category of goal statements and the differences between categories could be determined using Scheffe's Test.

Demographic Variables and Goal Selection

In this aspect of the study, no relationship was found on four variables: sex, age, number of years teaching, and subject previously taught. Ten other variables had significant F Tests. In seven of the ten, Scheffe's Test was not powerful enough to determine where the significant differences between means existed.

Personal Data

Under the personal data, three significant F Tests resulted. Scheffe's Test did not show a difference in two of the three with the third being split. Under the political orientation variable, a significant F Test was obtained on the outdoor education goal statements and the environmentalized education goal statements, but the Scheffe's Test could not determine a difference. Those participants that perceived themselves as having a very liberal political orientation ranked the outdoor education goals highest, and the conservatives ranked those goal statements lowest. In the environmentalized education goal statements, the moderates ranked the highest and the liberals the lowest. Because the number of very liberal respondents was small (3), the confidence intervals were broad which inhibited Scheffe's Test from determining a difference. When examining goals in education, particularly outdoor education and environmentalized education, political orientation should be considered as having a potential influence.

Recreational interests had a significant effect on the environmental education category, but the Scheffe's Test could not determine where the differences were. However, athletic individuals ranked those goals highest, and that category of goals was ranked equally lowest by the outdoor non-athletic group and the artistic-aesthetic group. The ranking of the environmental education goal statements was also influenced by professional organizations, and Scheffe's Test did determine a difference. Those individuals that belonged to nature organizations ranked environmental education goal statements significantly lower than those that belonged to environmental organizations. Though Scheffe's Test did not detect where the differences were, the opposite occurred on the environmentalized education scale. Those belonging to environmental organizations ranked the goals lowest and nature organizations ranked the goals highest. Apparently recreational interests and organizations did influence goal selection in environmental education, and organizations influenced goal selection in environmentalized education.

Education

All four variables under education had significant effects on at least one of the categories of goal statements. However, where the differences existed could not be determined in the major and minor variables.

Differences could be determined in the degree and school of graduation variables.

The respondents' degrees influenced goal ranking on the conservation education goals, the environmental education goals, and the environmentalized education goals. Respondents with a Doctor of Philosophy ranked conservation education goals higher than those with Bachelor's Degrees. Ph.D.'s also ranked the environmentalized education goals highest. On the environmental education goals, those with Doctors of Education were significantly higher than those with Doctors of Philosophy Degrees. Additional education did influence goal selection in three categories of goal statements.

Education majors ranked the environmental education goals highest, but that ranking was only slightly positive. English majors ranked that scale lowest. English majors did rank the environmentalized education goal highest and the "other" group ranked those goals lowest. In minors, the "other" category ranked the ecological education goals highest. The social science minors ranked ecological education goals lowest.

The conservation education goals and the general education goals were influenced by the location of the school from which they graduated. Though both groups ranked the conservation education goals negatively, the Midwesterners ranked the goals significantly lower than the Far Westerners. The Westerners were significantly

lower than both the Eastern and Midwestern graduates on the general education goals.

Generally and as expected, the educational background did influence goal selection, but the effect was not as persuasive or as definite as hoped in the study.

Occupation

Under this division, three variables had a significant influence on goal orientation: present occupation, grade levels of experience, and subjects now teaching. Scheffe's Test could not determine a difference on the present occupation variable.

Present occupation influenced the ranking of the general education goal statements. The "other" category ranked the general education goals highest and administrators ranked these goals lowest.

Rankings of the environmental education goals and the environmentalized education goals were significantly affected by the grade levels of teaching experience. Respondents that had taught in grades K-16 ranked the environmental education goals on the average significantly higher that the college (13-16) only group, the 9-16 group, and the "other" group, but not different from the K-12 group. Therefore, interaction with students at a variety of grade levels modified responses to environmental education and environmentalized education goals.

Subjects now being taught had a significant effect on four of the six categories of goal statements. Ecological education goals were ranked significantly higher than all the other groups by those presently teaching courses with environment in the title. Those teaching humanities ranked the outdoor education goals significantly higher than all the other groups. Environmental education goals were ranked significantly higher by those now teaching outdoor education courses than by those now teaching biological science, social science, and environmental courses. Teachers of the biological sciences ranked the general education goals significantly higher than those teaching outdoor education classes. Most of the categories were affected by the groups based on the subjects now being taught, but the effects were inconsistent.

In summary, 19 significant F Tests of a possible 70 were obtained. Sixty-three percent of the significant tests occurred in the environmental education category or the environmentalized education category. The remainder of the significant differences were inconsistently spread among other categories of goal statements.

Q Sort Distribution

The distribution of the average ranking on the sixty statements is presented in Figure 2. The distribution was generally normal with only a slight negative skewness.

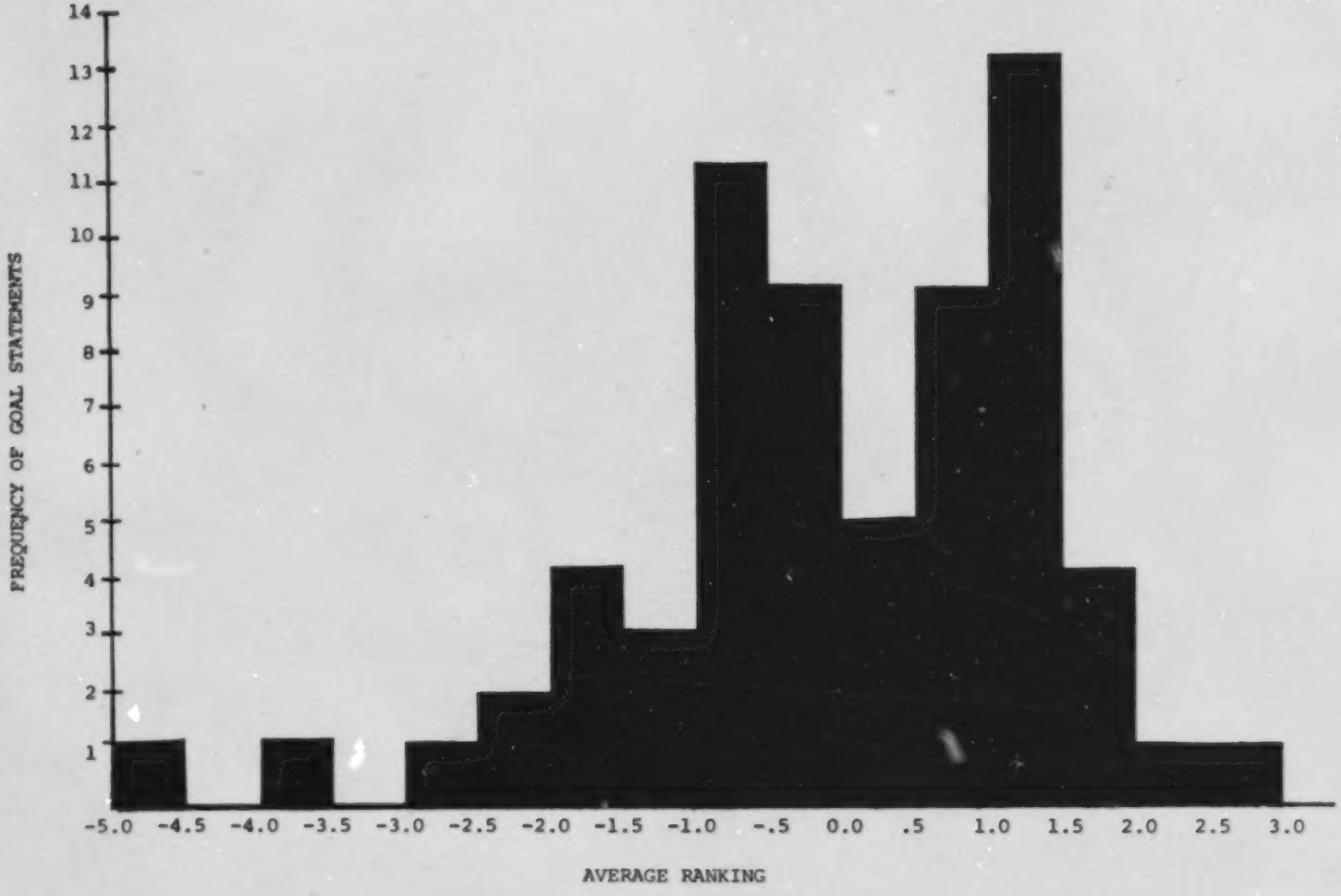


Figure 2. The Frequency of Goal Statements in Each Class of Average Ranking.

Two statements contributed to the skewness by being ranked very low by most participants as did the thirteen statements that averaged 1 to 1.5. Using an average score of 0.0 as a dividing line, thirty-three statements were ranked positively, and thirty-two statements were ranked negatively so that the testing instrument was balanced despite no overt attempt to maintain an equal number of statements on the positive and negative side.

The Top and Bottom Ten Statements as Ranked by All Groups

The top ten represented the items which were viewed as most appropriate by all groups (Tables 6 and 7). Six of the top ten goals were cognitive, three were affective, and one was a process goal. Four of the top five goals were man-oriented. The top ranked goals were a pot pourri of the six groups with three coming from the environmentalized education category, two from environmental education, two from conservation education, and one goal each from the general education, ecological education and outdoor education categories.

The goal statements were not rated highest by the representatives of the category from which the goal statements came. Only the fourth, fifth and tenth ranked goals were judged highest by the group that statement represented.

Less agreement between groups existed on the top five goals than on the second five goals. The range of

TABLE 6

THE MEAN RANKINGS OF THE FIVE STATEMENTS RECEIVING THE HIGHEST RANKINGS BY ALL GROUPS LISTED FROM HIGHEST RANKING TO LOWEST RANKING WITH THE RANGE OF +6 TO -6

Statements 1-5	Category of Source	Ranking by Group						
		Ecological Education	Conservation Education	Outdoor Education	Environmental Education	Environmentalized Education	General Education	All Groups
To understand that man is an inseparable part of a system consisting of man, culture, and the biophysical environment.	Environmental Education	2.8	4.5	2.1	3.2	3.9	1.6	3.0
To understand the interrelationship of man, other forms of life and the physical world.	Conservation Education	3.9	3.8	1.9	2.4	3.0	0.9	2.7
To contribute to the quality of life and the constructive use rather than exploitation of environments.	Environmentalized Education	1.8	3.6	2.6	3.2	1.5	0	2.1
To develop a conservation ethic for man's use, management and development of earth's resources.	Conservation Education	1.7	4.9	3.1	2.0	0.5	-0.5	2.1
To have some basic knowledge of ecological concepts and facts.	Ecological Education	4.7	2.9	0.9	1.1	0.6	0.2	1.8
	$\bar{X}$	3.0	3.9	2.1	2.4	1.9	0.4	

TABLE 7

THE MEAN RANKINGS OF THE SIXTH THROUGH TENTH RANKED STATEMENTS BY ALL GROUPS LISTED FROM HIGHEST RANKING TO LOWEST RANKING WITH A RANGE OF +6 TO -6

Statements 6-10	Category of Source	Ranking by Group						
		Ecological Education	Conservation Education	Outdoor Education	Environmental Education	Environmentalized Education	General Education	All Groups
To acquire attitudes of responsible citizenship in his social, economic, and physical environment.	General Education	0.5	2.5	0.8	2.4	2.0	2.3	1.7
To recognize the conflict between our economic values and ecological principles.	Environmental Education	1.9	2.3	0.9	1.6	1.6	1.0	1.6
To increase the understanding of the immediate environments in the context of broader environmental relationships and concerns.	Environmentalized Education	2.3	1.8	1.3	2.6	1.5	0	1.6
To learn how environments function as well as about what they consist of.	Environmentalized Education	3.8	2.7	1.0	0.9	1.6	-1.0	1.5
To enrich learning through real, direct experiences.	Outdoor Education	-0.7	0.6	4.4	0.3	2.8	2.0	1.5
	$\bar{X}$	1.6	2.0	1.7	1.6	1.9	0.9	

the average ranking of the top five statements was 3.5 ranks. On the sixth through the tenth ranked statements, the range of the average ranking was 1.1 ranks.

Conservation educators, as a group, ranked the top ten goals higher than the other five groups with an average ranking of 2.9. They were followed by ecological educators at 2.3, environmental educators at 2.0, outdoor educators and environmentalized educators at 1.9, and general educators at .65.

The lowest ten ranked statements came from four of the six categories of goal statements (Tables 8 and 9). Four were from outdoor education, three from conservation education, two from environmentalized education, and one from environmental education.

Only three of the lowest ten goals were cognitive, two were affective, two were psychomotor, two were process goals, and one goal had elements of the cognitive and affective realms.

More agreement occurred between the groups on the lowest five ranked statements than on the next lowest statements. The range of the average response to the lowest five statements was .9 ranks, but the range on the next five was 2.8 ranks.

Outdoor educators ranked the lowest ten statements highest, and general educators ranked them lowest, though environmentalized educators were also low.

TABLE 8

THE MEAN RANKINGS OF THE FIVE STATEMENTS PERCEIVED AS LEAST APPROPRIATE BY ALL GROUPS LISTED FROM THE LOWEST RANKING TO THE HIGHEST RANKING WITH A RANGE OF +6 TO -6

Statements 60-56	Category of Source	Ranking by Group						
		Ecological Education	Conservation Education	Outdoor Education	Environmental Education	Environmentalized Education	General Education	All Groups
To perceive ourselves as separate rather than one with our environment.	Environmentalized Education	-5.0	-5.3	-4.4	-5.7	-4.8	-3.7	-4.8
To promote physical development.	Outdoor Education	-4.6	-5.2	-2.9	-3.6	-3.6	-3.2	-3.9
To give information, habits, and attitudes conducive to health.	Conservation Education	-3.8	-3.1	-3.6	-2.2	-2.1	-1.4	-2.7
To reduce the world's population growth to zero.	Environmental Education	-1.8	0.9	-5.6	-2.0	-4.2	-3.2	-2.6
To learn about the geological structure of a given area and the characteristics of common rocks and minerals.	Outdoor Education	-1.6	-1.5	-1.0	-2.9	-4.0	-4.1	-2.5
	$\bar{X}$	-3.4	-2.8	-3.5	-3.3	-3.7	-3.1	

TABLE 9

THE MEAN RANKINGS OF THE FIVE STATEMENTS PERCEIVED AS NEXT LEAST APPROPRIATE BY ALL GROUPS LISTED FROM THE LOWEST RANKING TO THE HIGHEST RANKING WITH A RANGE OF +6 TO -6

Statements 55-51	Category of Source	Ranking by Group						
		Ecological Education	Conservation Education	Outdoor Education	Environmental Education	Environmentalized Education	General Education	All Groups
To understand the concepts of area, distance, and direction and learning how to read maps and use a compass.	Outdoor Education	-1.4	-2.1	-0.5	-3.0	-3.7	-2.7	-2.2
To develop interest in wild plants and how they grow.	Conservation Education	-0.9	-2.1	-0.2	-1.8	-3.1	-4.1	-2.0
To discover knowledge you never knew you had.	Environmentalized Education	-3.7	-3.4	-2.1	-0.9	-0.7	-0.1	-1.9
To get firsthand experience with small animals such as snails, frogs, harmless snakes, rabbits, and others.	Conservation Education	-1.2	-1.5	0.8	-2.7	-3.2	-4.1	-1.9
To become acquainted with the plants, animals, and birds in an area.	Outdoor Education	0.5	-1.4	0.5	-1.7	-3.3	-4.5	-1.6
	$\bar{X}$	-1.54	-1.26	-0.3	-2.02	-2.8	-3.1	

The lowest ten statements were primarily oriented toward subject areas such as physical development, health, geology, mapping, and plants or animals.

In the top ranked and bottom ranked goals, no particular category of goal statements was viewed as most appropriate or most inappropriate by all groups. Man-oriented goals were viewed as most appropriate, and subject area goals were viewed as least appropriate. More agreement among groups existed on the lowest five ranked statements than on the five highest ranked statements.

The Top Ranked Goals by Each Group

Goal overlap was evident when examining the top five rated goals by each of the six groups in Tables 10 and 11. The first listed goal by the environmental educators was the fourth rated goal of the conservation educators. The second listed goal by environmental educators was the highest rated goal of the environmentalized educators and the second rated goal by conservation educators. And the fourth rated goal by the environmental educators was the second rated goal by the environmentalized educators, third rated by ecological educators and conservation educators. The first rated goal of the ecological educators was the fifth rated goal of the conservation educators. Outdoor educators' first rated goal was third rated by the environmentalized educators. And lastly, the first conservation educators' goal was

TABLE 10

THE TOP FIVE RANKED GOAL STATEMENTS BY EACH GROUP OF PARTICIPANTS

Environmental Educator Statements	Ranking, Mean & Source	Environmentalized Educator Statements	Ranking, Mean & Source	General Educator Statements	Ranking, Mean & Source
To contribute to the quality of life and the constructive use rather than exploitation of environments.	3.2 Environmentalized Education	To understand that man is an inseparable part of a system consisting of man, culture, and the biophysical environment.	3.9 Environmental Education	To preserve and extend the worth and dignity of the individual.	4.4 General Education
To understand that man is an inseparable part of a system consisting of man, culture, and the biophysical environment.	3.2 Environmental Education	To understand the interrelationship of man, other forms of life and the physical world.	3.0 Conservation Education	To assist every individual to acquire an understanding of himself.	3.9 General Education
To increase the understanding of the immediate environments in the context of broader environmental relationships and concerns.	2.6 Environmentalized Education	To enrich learning through real, direct experiences.	2.8 Outdoor Education	To develop an appreciation of and respect for the rights of others.	3.4 General Education
To understand the interrelationship of man to other forms of life and the physical world.	2.4 Conservation Education	To make education environmental in essence and not merely in content.	2.8 Environmentalized Education	To make decisions based on the best available evidence after a detailed analysis of alternatives.	3.2 Environmental Education
To acquire attitudes of responsible citizenship in his social, economic, and physical environment.	2.4 General Education	To promote the development of social relationships and individual responsibility.	2.7 Outdoor Education	To understand that scientific knowledge is tentative, subject to change as evidence accumulates.	2.8 Ecological Education
	$\bar{X}$ = 2.76		$\bar{X}$ = 3.04		$\bar{X}$ = 3.54

TABLE 11

THE TOP FIVE RANKED GOAL STATEMENTS BY EACH GROUP OF PARTICIPANTS

Ecological Educator Statements	Ranking, Mean & Source	Conservation Educator Statements	Ranking, Mean & Source	Outdoor Educator Statements	Ranking, Mean & Source
To have some basic knowledge of ecological concepts and facts.	4.7 Ecological Education	To develop a conservation ethic for man's use, management of earth's resources.	4.9 Conservation Education	To enrich learning through real, direct experiences.	4.4 Outdoor Education
To understand the nature of an ecosystem.	4.4 Ecological Education	To understand that man is an inseparable part of a system consisting of man, culture, and the bio-physical world.	4.5 Environmental Education	To possess the skills necessary for learning in any situation and to learn continuously at his own direction.	3.5 General Education
To understand the interrelationship of man, other forms of life and the physical world.	3.9 Conservation Education	To understand the inter-relationship of man, other forms of life, and the physical world.	3.8 Conservation Education	To enjoy the world of nature in its beauty and variety.	3.4 Outdoor Education
To learn how environments function as well as about what they consist of.	3.8 Environmentalized Education	To contribute to the quality of life and the constructive use rather than exploitation of environments.	3.6 Environmentalized Education	To develop skills for the constructive and creative use of leisure time.	3.1 Outdoor Education
To study the relationship of a species to the physical and biological factors of its environment.	3.6 Ecological Education	To have some basic knowledge of ecological concepts and facts.	2.9 Ecological Education	To develop a conservation ethic for man's use, management and development of earth's resources.	3.1 Conservation Education
	$\bar{X}$ = 4.08		$\bar{X}$ = 3.94		$\bar{X}$ = 3.5

the fifth outdoor educators' goal. None of the top five general education goals overlapped any of the other five groups.

Thirteen of the thirty goals (43%) were cognitive goals mostly using the verb to understand. Nine (30%) of the goals were affective promoting the development of attitudes or values. Two goals (7%) in outdoor education were psychomotor oriented. Five goals (17%) dealt with the educational process. Cognitive goals were predominant among ecological educators. At least three cognitive goals were in the top five among environmental educators and conservation educators. The top three goals rated by general educators were affective. Affective goals were also top-rated by environmental educators and conservation educators.

Category Reliability

To determine the predictability or consistency of the categories of goal statements, a reliability analysis was completed as listed in Table 12. The general education category was the most reliable or consistent, followed by ecological education. Both reliabilities plateaued with nine goal statements remaining. Goal statements from the conservation education category were the third most reliable, and that category also plateaued at nine statements. Little or no change occurred when deleting goal statements from the outdoor education

TABLE 12

HOYT'S ALPHA RELIABILITY COEFFICIENT
FOR EACH CATEGORY OF GOAL STATEMENTS

	Number of Statements Deleted				
Category	4	3	2	1	0
Conservation Education	.73	.73	.73	.72	.62
Ecological Education	.77	.78	.79	.80	.74
Environmental Education	.64	.61	.60	.57	.52
Environmentalized Education	.48	.48	.44	.39	.30
Outdoor Education	.65	.66	.67	.65	.66
General Education	.84	.84	.84	.83	.66

category, the fourth most reliable of the categories. The environmental education category seemed to plateau at eight statements, but then increased in reliability when two more statements were dropped. Least reliable of the categories was environmentalized education which maximized reliability with three items dropped from the scale. For further analysis, ten goal statements were used in the outdoor education category, nine statements in the general education, ecological education and the conservation education categories. Seven statements in the environmentalized education category, and six statements in the environmental education category were then used.

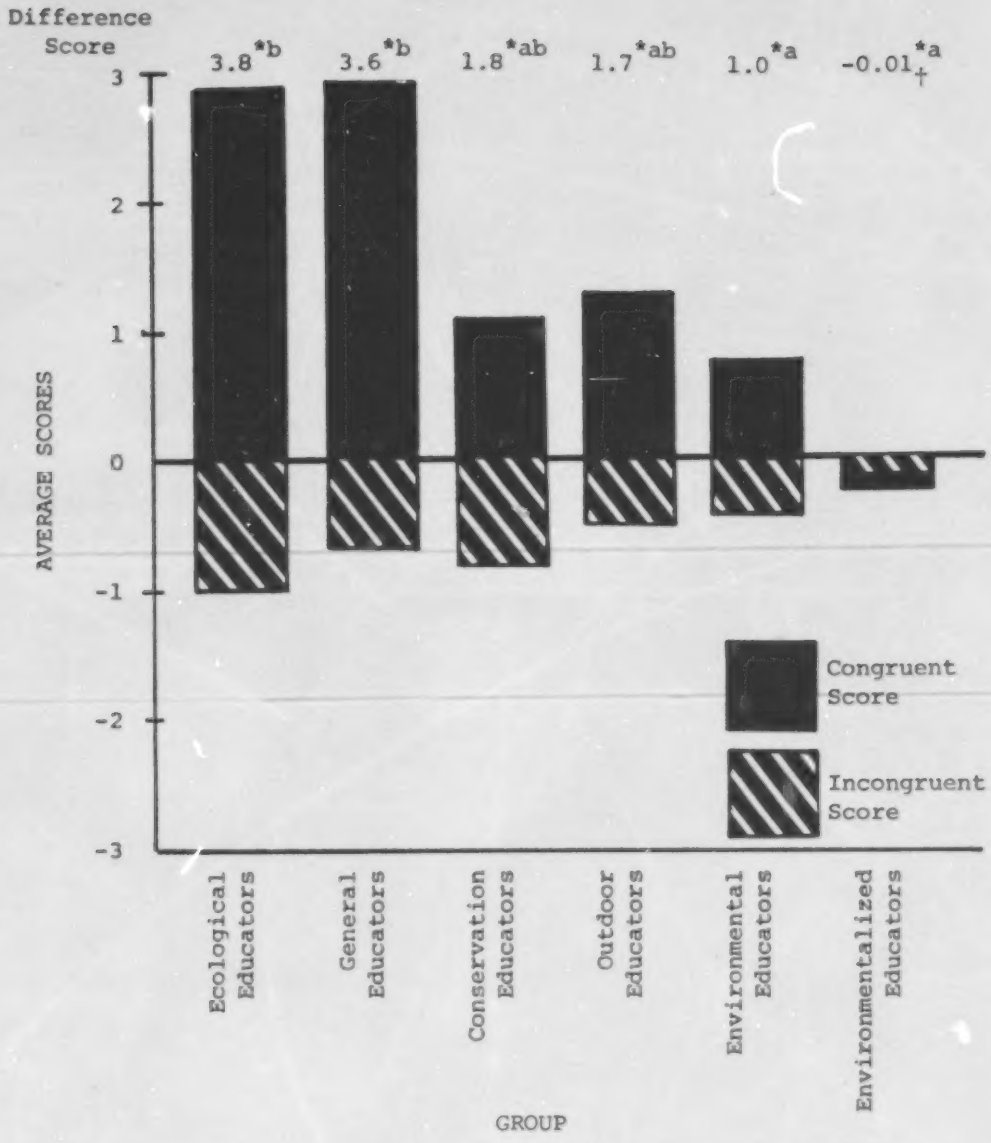
Multivariant Analysis of Variance

The multivariant analysis of variance using repeated measures was employed to determine if the groups were responding to the categories of goal statements differently. Then if an interaction between groups and measures occurred, both tests were significant with 95 percent confidence. Therefore, it was concluded that the categories were being rated differently and that the groups were rating each of the categories differently. However, further testing was necessary to determine where the differential responses occurred.

Congruency Test

The congruent and incongruent scales (Figure 3) were then used to emphasize where the differences were discovered in the multivariant analysis of variance using repeated measures. The grand mean of the "Diff" scale was significant with a probability of less than .0001. Therefore, there was a general differential response over all groups between the congruent and incongruent scores. The individual "Diff" scale means were then tested to ascertain if the groups differed in degree of discrepancy between the congruent and incongruent scales. The univariate one-way analysis of variance was significant with a probability less than .0001. As a result, it was concluded that there was a difference between the congruent scale and the incongruent scale within the six groups.

Scheffe's Post Hoc Pair-Wise Test for Homogeniety (Hayes 1963) was used to determine which differences contributed to the significant F Test, as indicated in Table 13 superscripts. Ecological educators and general educators differed from environmentalized educators and environmental educators, but none of the four groups was different from conservation educators or the outdoor educators. On the average, ecological educators and general educators rated the goals from their corresponding category higher than environmental educators or



* Indicates significance with 95% confidence.

a,b Indicates that the differences having the same superscript are homogeneous.

† Indicates that the grand mean was significant with 95% confidence.

Figure 3. The Mean Rankings on the Congruent Scale and Incongruent Scale are Listed by Group. The Difference Between the Two Scales is Listed at the Top.

environmentalized educators. But no rating of goal differences has been established between conservation educators, environmental educators, environmentalized educators, or outdoor educators.

Group Ranking Within Each Category of Goal Statements

Finally, to complete the understanding of how the groups responded to each of the six categories, the mean group response within each of the six categories was examined, and the data summarized in Table 13. Significant F Tests with 95 percent confidence intervals were obtained in five of the six goal statement categories. No significant differences between groups were found in the environmental education category. Within the five categories, Scheffe's Post Hoc Simple Contrasts for Homogeniety (Hayes 1963) were again calculated to determine which differences contributed to the significant F Tests. Ecological education goals and outdoor education goals were ranked significantly higher by their corresponding group than all the other five groups. Within the general education category, general educators did rank their statements highest, but not significantly higher than the environmentalized educators. Environmentalized education goals were ranked highest by environmentalized educators educators, but the mean ranking was negative and not significantly different from three other groups.

TABLE 13

THE MEAN RANKING BY GROUP WITHIN EACH CATEGORY OF GOAL STATEMENTS

Group	Ranking by Group						
	General Education	Ecological Education	Environmentalized Education	Outdoor Education	Conservation Education	Environmental Education	Sum
General Educators	2.9^{c}	0.1^{a}	-1.1^{ab}	-1.0^{a}	-1.0^{b}	-0.2^{a}	-0.3
Ecological Educators	-1.3^{a}	2.8^{b}	-2.3^{a}	-1.5^{a}	1.3^{a}	-1.1^{a}	-2.1
Environmentalized Educators	1.1^{bc}	-0.8^{a}	-0.1^{b}	-0.9^{a}	-0.5^{ab}	0.6^{a}	-0.6
Outdoor Educators	-0.6^{ab}	-0.8^{a}	-1.2^{ab}	1.2^{b}	1.0^{a}	-0.7^{a}	-1.1
Conservation Educators	-0.9^{ab}	0.2^{a}	-1.9^{a}	-1.1^{a}	1.1^{a}	0.4^{a}	-2.2
Environmental Educators	0.1^{ab}	-0.2^{a}	-0.7^{ab}	-0.9^{a}	0.0^{ab}	0.7^{a}	-1.0

^{a,b,c} Means having the same superscript are homogeneous using Scheffe's contrasts.

Environmental educators also ranked their goals highest, but no significant differences were found between any of the six groups on the environmental education goal category. Conservation education goals were ranked higher by ecological educators than by conservation educators. Therefore, although five of the six goal categories were ranked highest by their corresponding groups, only ecological educators and outdoor educators responded to their own goals as more appropriate than the other five groups. No differences were found on the group responses to the environmental education goals.

CHAPTER IV

DISCUSSION

Sample Demographics

The typical respondent was a male who was more than forty years old. He graduated from a Midwest university with a Ph.D., majoring in a natural science or education field and minoring in a natural science area. Currently, he is a college professor with 16-30 years teaching experience, usually science courses, and he has also taught in at least one other level of education.

Politically, he views himself as a moderate, enjoys outdoor non-athletic activities such as hunting, fishing and gardening, and belongs to both professional organizations and a professional educational society.

Each group seemed to have its own uniqueness. The ecological educators were totally dominated by natural science majors, minors, and professional organizations. Conservation educators were much older, in fact, all were in the above fifty category. Both the environmental educators and the environmentalized educators were administrators more than college professors. Both groups had participants with Bachelor's Degrees, and they both had classroom teachers as participants. Lastly, general

educators were more social science oriented in their majors and minors.

Overlap between the subject areas was evident in the demographic data. Environmental educators had conservation education as a major, environmentalized educators had environmental education as a minor, and outdoor educators had conservation education as a minor. The overlap was even more apparent in the subjects now being taught. Five conservation educators were teaching environmental education or outdoor education, and two outdoor educators were teaching environmental courses.

Demographic Variables and Goal Selection

Generally, the results were inconsistent. All the goal categories were influenced by a demographic characteristic but only two distinctive patterns were evident. The variable which affected the majority of goal categories was the subject areas which the participants were now teaching. A well-informed teacher will be exploring intellectually within the framework of his current teaching responsibility and that exploration influenced the ranking of four goal categories.

Environmental education goals and environmentalized education goals, the two lowest ranked goal categories, were affected the most by the demographic variables. Normally, one would not expect the goals which were ranked negatively by most groups and the range of response

which was comparatively narrow to develop significant differences. However, when a positive response or negative response did occur, the result was a significant difference. The individuals who ranked environmental education goals highest tended to be more education-oriented. They were Doctors of Education or education majors, or had experiences in all levels of education, or were teaching outdoor education courses. Those who ranked the environmentalized education goals were opposites. They were Doctors of Philosophy, or English majors, or teaching only at the college level, or teaching an environmental course. Cognitive-oriented people ranked environmentalized education goals higher whereas more education-oriented people ranked environmental education goals higher.

In relation to these two goal categories, another interesting relationship occurred. Those belonging to environmental organizations ranked environmental education goals significantly higher than those belonging to nature organizations. Yet, in the environmentalized education's goals, just the opposite occurred. Nature "buffs" have often been categorized as environmentalists, and environmentalists have been stereotyped as "nature freaks", but the apparent response to those goals categories suggested that these two groups have different purposes. In subjects now teaching, a similar situation occurred with outdoor education courses and environmental courses.

Outdoor education teachers felt the more value and social change goals of environmental education were more appropriate than those teaching environmental courses. The process goals of environmentalized education were more appropriate to those teaching environmental courses than those teaching outdoor education courses. This appeared to be a role reversal. According to Miller (1971), outdoor educators should be educational processors and environmental educators the social radicals.

Top Ten and Bottom Ten Goals as Ranked by All Groups

The top ten statements represented the goals of greatest agreement between the component groups. Man's relationship to and utilization of the environment were the major ideas agreed upon by all groups. Both Schoenfield (1970) and Swan (1969) argued that the man-orientation and the quality of life were the major distinguishing features of environmental education, distinguishing it from conservation education. But based on these data, conservation educators consistently ranked man-oriented goals higher than other groups, and therefore, man's relationship and influence on the environment were the areas of agreement, not the distinguishing features. Since conservation educators consistently ranked man-oriented goals higher than the other groups, this should not be used to differentiate environmental education and conservation education.

Although most of the top ten goals were cognitive, it was encouraging that strong agreement existed on affective goals. For example, conservation educators, who in the past displayed "emotionalized attitudes toward the natural environment" (Fink 1942), were strongly supported by most groups. The conservation ethic and attitudes of responsible citizenship were also most strongly supported by the conservation educators. In fact, where other groups were sporadic in support of the top ten goals, conservation educators were consistently high and were the strongest influence on the top ten goals. Such expansion of conservation education goals might be attributed to the recent influence of related areas such as environmental education, environmentalized education, etc.

The ten lowest ranked goals were the antithesis of the top ranked statements. For example, the last ranked statement emphasized man's separation from the environment rather than the inseparable environmental component of the top ranked statement. Seven of the last ten were components of particular subject areas such as geology or botany which could be easily identified as inappropriate and is supported by the narrow range in responses. So, the more general goals tended to be more appropriate, but the more specific goals were more inappropriate.

Several content goals rated in the last ten also deserved some discussion. Promoting physical development was negatively ranked by all but outdoor educators who were less negative than the other groups. The negative ranking seemed unusual since outdoor education has emphasized outdoor physical activities through support by the American Alliance of Health, Physical Education and Recreation. Health education is currently receiving attention among environmental educators, and it has been related to conservation education since the 1920's (Funderburk 1948). Apparently, neither the current emphasis in environmental education nor the historical relationship with conservation education has had an influence. Reducing the world's population growth to zero was rated positively by only one group, conservation educators. Population growth is one of the most important, if not the most important environmental problem. Either the participants are not convinced that population growth is a problem, or they disagree that the growth rate should be zero.

Ecological Education

Overall, ecological educators selected their goals as more appropriate more often than did all of the other groups. The reasons for their distinction became evident in the top five ranked goals of this group, since four of the five goals were unique to ecological education.

The importance of ecological concepts and facts, the top ranked goal, was supported by Kormondy (1969), Pianka (1974), and Watt (1973). The other three top ranked goals were specific cognitive goals readily identified by the ecological educators.

Ecologists also shared concerns with three other groups: conservation educators, environmentalized educators and environmental educators. As their third ranked goal suggested, ecologists believed that, "The solution of mankind's environmental problems" (Odum 1959), is in ". . . understanding the natural systems formed by organisms and environments for its own sake and for the sake of man's future" (Whittaker 1970). Though ecologists are primarily concerned with the biological ecological problems (Krebs 1972), they also share concern about man's relationship to the biophysical world.

Originally, the ten goal category was the highest of the six categories which peaked at nine items, but it declined slightly in the successive four deletions. Deleted was the cognitive goal concerning the evaluation of man in response to the environment, a goal which has not only biological, but anthropological and philosophical connotations and which ecologists had difficulty identifying.

Dramatized on the congruence test were the differences in ranking between the categories of goal statements. Ecological educators had the greatest

difference between average ranking on their goal statements versus the average ranking of the goal statements in the other five categories. The source of these differing views might be found in the demographic variables. Their academic training (as indicated by major, minors and courses teaching and taught) was totally pure or applied science. The organizations to which they belonged followed their science specialty and occupation, but they did not participate in the professional education organizations. It therefore would seem plausible that the lack of interaction with the "professional education" realm and their content orientation has left them capable of distinguishing their content-oriented goals from the other five categories.

The mean response to each of the six categories by ecological educators was significantly higher than all the other groups within their own category of goal statements.

In this study, ecological educators also ranked the conservation goals highest. The roots of conservation can be found in the writings of applied ecologists during the late 1800's and early 1900's (Clepper 1966). Hence, the conservation philosophy was evident in the ecologists' discussion of protective environments, endangered species, energy flow, and the cycling of materials. However, the social action goals of environmental education were lowest ranked.

Ecological educators are a distirctive group. They have cognitive, biological goals which follow the strong orientation of their academic training, and professional affiliations. As a group, ecological educators are definitely different from general educators, outdoor educators, and environmentalized educators.

General Education

General educators were the second most distinctive group as indicated by the top five goals, the reliability scale, and the congruency test. Three of the top five goals stressed the individual or the individual's relationship to others. These goals seemed antagonistic to the structure of public education where the courses are predominantly content courses with only a few involved with self-discovery or human interaction. If these very individuals goals are pervasive, then education should have a much different structure.

Goals which could be termed science education were the fourth and fifth ranked goals. Understanding science and the alternatives that technology provides is one of the most difficult public issues of our time. How can we expect the public to be "making decisions on the best alternatives" when credible scientists are at odds? A crucial example is the nuclear power issue.

Being the most reliable of the six categories was the first indication of a difference with the general

education goals. Only a statement with the term "environment" was unreliable which might have been misconstrued as part of other goal categories. Distinction from the other groups was not as precise on the congruency test where general educators were significantly different from only environmental educators and environmentalized educators. However, when comparing the rankings of their own goal statement category, general educators were significantly higher than all groups except environmentalized education so that general educators and environmentalized educators do share some common goals. That affinity must have come from the environmentalized educators because the environmentalized education goals were the lowest ranked category by general educators.

General educators had broad general goals about the development of the individual and his relationship with others. General educators ranked the other categories neutral, but environmentalized educators did rank general education goals significantly more appropriate than other groups.

Outdoor Education

Unlike conservation educators, outdoor educators were different from the other groups in several phases of the research. Three of the five most appropriate goals were unique to outdoor educators. Adaptable

learning skills, the second ranked goal, was strongly supported by Russell (1967) and is philosophically consistent with the support of general education by using the outdoors as a learning situation. Mand (1967) and Vogel (1974) also agreed that the third ranked goal, enjoyment of nature, was important to outdoor education. Leisure time skills, the fourth ranked goal, received literature support from Fitzpatrick (1968), Mand (1967), and Nowak (1971) and financial support from the American Alliance of Health, Physical Education, and Recreation. On their own category of goal statements, outdoor educators were significantly higher than all the other groups.

Outdoor education was not totally distinctive, however. For example, real, direct learning experiences, a goal strongly supported by Smith (1970), Fitzpatrick (1968), Oxford (1973), and Nowak (1971), was also the fifth ranked goal of environmentalized educators. Kirk's (1968) position that conservation education was a major goal of outdoor education was reinforced by the fifth ranked goal of outdoor educators which was the first ranked goal of conservation educators. The difference between the congruent and incongruent scales were quite similar between the two groups and the ratings of the six categories were quite similar. Sharing of goals and similar rankings probably stemmed from the long association of the two groups beginning in the late 1800's with both groups having strong programs

by the 1940's. This long association has resulted in some goal convergence between the two groups.

As a group, outdoor educators did perceive their goals as more appropriate than the other goal categories. Three of the top five goals were unique to outdoor education, but the first and fifth ranked goals were shared with environmentalized educators and conservation educators. Two of the top five goals were directed toward the general education of the individual.

Conservation Education

Conservation education goals were not as distinctive as the goals of ecological education and general education. The five most appropriate conservation education goals were also the most appropriate goals of at least one of the other groups. For example, the most appropriate goal was the fifth ranked outdoor education goal, the second most appropriate goal was also second ranked by environmental educators, and the third ranked goal was shared with three other groups.

Schoenfield (1970) and Swan (1969) both have argued that conservation education was natural resource oriented, and environmental education was the quality-of-man's environment oriented.

But four of the five most appropriate goals were man-oriented arguing against the resource orientation claimed even by the Conservation Education Association.

Conservation education and environmental education are claimed to be different by Schoenfield (1970), Swan (1969), and Lowe (1972). But conservation educators shared more goals with environmental educators than any other group which suggested more than a spawning relationship. Fink's science perspective was only evident in the ecological concepts and facts goal.

Only the "attitudes conducive to health" goal was deleted from the conservation education scale. This was unpredictable because of the low ranking by all groups.

Overlap of conservation education goals with the goals of other groups was very evident on the congruency test where on the "Diff" scale, no differences were found between conservation educators and all the other groups. Although conservation educators did have some goal differentiation, they did not have the strength or preciseness of the ecological educators or general educators. On their own category of goal statements, conservation educators ranked their own goals highest, but ecological educators ranked them even more appropriate. Outdoor educators ranked the conservation education goals only slightly less appropriate than the conservation educators. Ecological education goals and environmental education goals were positively appropriate to the conservation educators.

In summary, conservation educators shared their five most appropriate goals with environmental educators,

ecological educators, outdoor educators, and environmentalized educators. Conservation education goals were viewed as appropriate by ecological educators and outdoor educators. Ecological education goals and environmental education goals were ranked as slightly appropriate.

Environmentalized Education

Noel McInnis' influence was evident in the most appropriate goals of environmentalized educators. He stated that "education is most environmental which most facilitates a direct encounter with the environment being learned" (McInnis 1972). His idea was evident in the third and fourth ranked goals. Other influences were also seen.

The influence of environmental education was apparent as two of the key words in Buell's (1974) derived definition of environmental education could be found in the five most appropriate goals. "Direct experience action" was the emphasis of the third ranked goal and "process" was the "essence" of the fourth ranked goal. Man's relationship to the environment received the stress in the top two ranked goals. An affinity for outdoor education and general education was evident in the fifth most appropriate goal.

To plateau the reliability of the environmentalized education category, three statements were deleted.

These three statements were unreliable because they were in the five most appropriate statements of three other groups: environmental educators, ecological educators, and conservation educators.

On the congruency test, environmentalized educators were an enigma because they rated their own scale even lower than the average of the other five scales. The reason became lucid in the examination of the narrow category responses. Environmentalized educators rank their own goal category highest, but they ranked general education and environmental education goals even higher. This information seemed to support the concept that environmentalized education is an environmental education with strong general education leaning or vice versa. Interestingly, environmental educators and general educators were the next high rankers of environmentalized education goals. Therefore, environmentalized educators seemed to be precariously balanced between environmental education and general educators.

Environmental Education

Lawrence H. Buell (1974) based on the analysis of 100 different literature sources derived a definition of environmental education. Many of his descriptive phrases could be found or were implied in the five most appropriate goals of environmental education. Those

phrases are: "interrelationship, interdependence, quality of life, responsible caring, citizenship, total environment, acting upon, and understanding." Such phrases as: "problem solving, process, and decision-making" from Buell's (1974) definition were obvious omissions. Generally, the most appropriate goals of environmental education did follow the pattern established by Buell's (1974) definition and Schoenfield's (1970) man-environment thinking.

Four of the ten goal statements from the environmental education scale were deleted to obtain the most reliable scale. Two of those statements were ranked in the ten top ranked statements by all groups, and one statement was ranked in the bottom ten by all groups. Therefore, statements which were viewed as most appropriate or less appropriate by all groups could not be reliable indicators of category differences.

Environmental educators were unable to distinguish their own goals on either the congruency test or in the individual category response. Because of the interdisciplinary nature of environmental education, a decade of special emphasis has not resulted in a unique set of goals for environmental education. Conservation education, outdoor education, and environmentalized education were also interdisciplinary or multidisciplinary, and as a result, these three groups have a tendency to

share goals with each other and with environmental education. But the distinctiveness of environmental education claimed by the numerous authors in the literature review was not evident. As a group, environmental educators take their goals from or share their goals with the other groups in this study.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Group Relationships

As discussed previously, many authors have claimed both similarities and differences of the six groups studied. Malcolm Swan (1975) in an article entitled, "Forerunners of Environmental Education" showed a three-circle diagram which, "...has often been used to illustrate the relationship of environmental education with two of the other education movements with which it is closely allied and upon which it greatly depends."

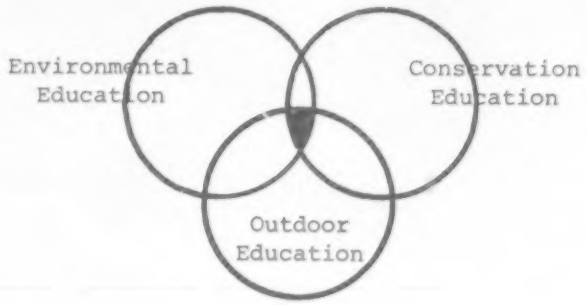
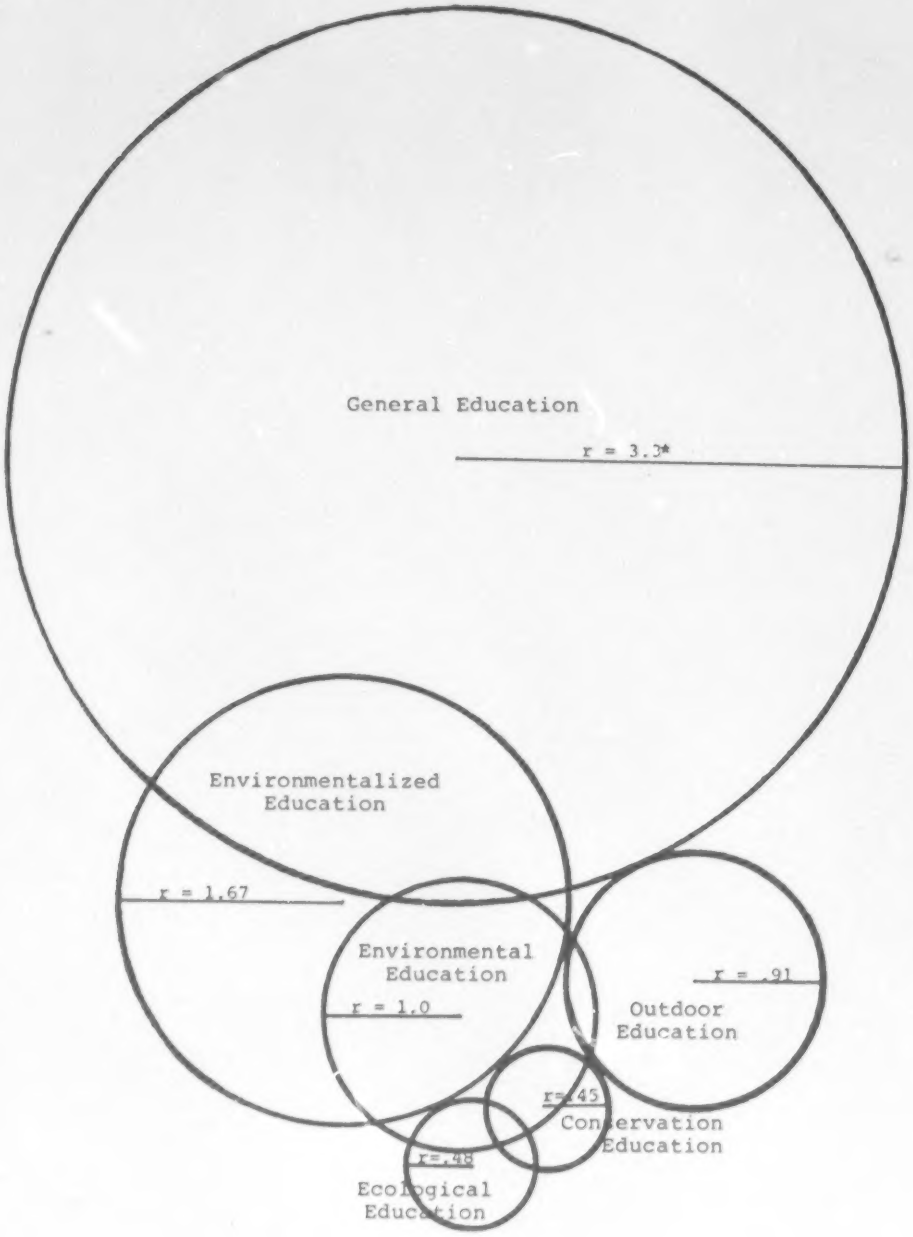


Figure 4. Overlapping Areas of Environmental, Conservation and Outdoor Education

However, the results (Figure 5) from this research suggested that the interrelationships discussed by Swan (1975) were more complex than illustrated in his model.



*All radii are in inches.

Figure 5. A Model of This Study's Conclusions is Presented to Illustrate the Relationship Between the Six Component Groups.

Figure 5 is a representation of the relationships between the six areas studied. In this model, every component represented a type of relationship between the six categories of goal statements or the six groups.

Spheres seemed to be the most appropriate geometric shape because of the dynamics implied by such terms as spheres of knowledge. Education, a rapidly changing field like a ball, seemed capable with the faintest of pressures to move progressively forward or regressively backward. Changing of the radius of the spheres would increase the area rapidly which would convey the idea that small ideas within any intellectual sphere would have extensive repercussions. Thus spheres seemed best to represent the six areas studied.

The relative size of the spheres was a very important component in illustrating the relationship of these six groups. The radius of the spheres was based on the reciprocal of the summed average responses to the six categories of goal statements (Table 13). The largest sphere was general education. Any illustration of general education must be large because it must represent all the knowledge developed by man. This was true in the general educator response to the six goal categories. Since environmentalized education shares the breadth of general education and environmental education, the comparatively large radius is appropriate. Outdoor education and environmental education were similar in size.

Environmental education could be interpreted very broadly, but within this study, environmental education did not view any category of goals as strongly appropriate. Outdoor educators, though they ranked their own goals significantly higher, did not take a strong position on any of the goal categories. Therefore, the similarity in size and the intermediate size of the environmental education and outdoor education spheres is a good representation.

The ecological education sphere and conservation education sphere were also similar in size. The small radius of the ecological education sphere results from the comparatively narrow perspective of ecology as a science and the strong positions taken towards their own goals as well as toward the other goal categories viewed as inappropriate. Conservation educators did not take a strongly affirmative position on any of the goal categories, but rather strongly viewed one goal category as inappropriate. The result was the smallest radius for conservation education.

The positioning of the spheres was also important to the understanding of the six groups. On their individual goal categories, three groups tended to be different from the other three groups: the general educators, ecological educators, and outdoor educators. General educators were different from ecological educators on the general education scale and vice versa so that

these two spheres should not intersect. Outdoor educators were different on their scale from the other five groups so that sphere should not intersect other spheres except the environmental education sphere which will be discussed later. Vertically, general education at the top of the page had a person orientation, while ecological education at the bottom had a content or subject matter orientation.

Intersection of the general education and the environmentalized education spheres occurred because environmentalized educators were not different from general educators on the general education goals. Correspondingly, environmentalized educators and general educators were not different on the environmentalized education statements. Because the environmentalized educators were not different from conservation educators on the conservation education goals, the environmentalized education sphere also intersected the conservation sphere, but with a comparatively small area of overlap. The environmentalized education sphere and the environmental education sphere should be large because the responses were not different on any scales.

The overlap area between the conservation education sphere and the environmental education sphere was especially large since neither were different on the two categories of goal statements, and three of the top five ranked goals were shared. Despite the small area of the

ecological education sphere, a large area of overlap occurred with the conservation education sphere because environmental educators were not different on the conservation education scale. In fact, they ranked that category the highest of all the groups. In addition, conservation educators and environmental educators and environmentalized educators all shared two of the top five ranked goals.

The last intersections of concern were those from the environmental education sphere. No differences existed between the groups on the environmental education goal statements. Except in the ecological category and the outdoor education category where one group was different from the other five groups, environmental educators were in the middle of the pack. Therefore, the environmental education sphere intersected all of the other five spheres.

The last aspect of the model was the tangential circles. The tangency of circles indicated that although no differences were found within the categories, at least one of the top five goals was shared. Outdoor education shared their fifth ranked goal as the top goal of the conservation educators and the second ranked goal was by intent a general education goal. The second ranked goal of environmentalized educators was also the third ranked goal of ecological educators so that these two spheres should be tangential.

The simple model presented by Dr. Swan (1975), according to the goal rankings presented in this paper, was inappropriate. No simple overlap between the three areas existed. In fact, the interrelationships were very complex. Is it any wonder that schools have difficulty developing and even naming programs?

Demographic Variables and Goal Selection

Many of the demographic variables influenced the ranking of one or two of the goal categories, but the subjects that the participants were currently teaching influenced most of the goal categories. Therefore, the current milieu of the participant was a more pervasive modifier of the participant's goal perspective than are the other general background demographic variables.

The ranking of the environmentalized education goals and environmental education goals were most influenced by the demographic variables. The participants took a stronger position on the goals of these two categories according to their personal interests, their education, or their occupation rather than to the subject groups used in this study. Apparently, philosophical differences exist on the environmentalized education goals and the environmental education goals, but the differences are more related to the demographics of the individuals than to the subject groupings used in this study.

Recommendations

Relationships between Groups

Does it really make a difference to know that similarities or differences existed between the component groups? In Michigan, probably like many other states, environmental educators and outdoor educators attend different conferences so that ideas are infrequently shared between the two groups and mutual support in program development and funding never coalesce. Nationally, several different organizations exist such as the Conservation Education Association and the National Association of Environmental Educators. Separate organizations with overlapping goals are operating independently without nearly the influence that a coalition between the two organizations could produce. But based on goals, two separate organizations should not exist.

Ecology is the backbone of understanding man-environmental relationships and thus the meat of environmental education, conservation education, environmentalized education and outdoor education. Yet, between this foundational cognitive area and the educational application areas, a definite difference existed. No gap should exist, but rather a tight cohesive relationship should exist between any new knowledge or insight gained in the research realm and its application to education.

The opposite should also occur; ecologists should be constantly aware of new ideas and developments in education related to environmental issues so that they can effectively communicate to their students and to the public new advances in the science. Ultimately, progress in the public, the political and the scientific realms will depend on a strong symbiotic relationship between ecological research, educational research and the process of education.

The gap between general education and the other five components is disturbing. If education as a whole is not convinced that environmental issues are of fundamental importance, despite the intensive emphasis received in the last decade, the approach to communicating the concerns must be strongly reevaluated. Solving difficult environmental problems requires dedicated efforts by all components of education so every component must be totally convinced of the importance of their role.

Because of the confusion, overlap, and lack of awareness between groups, the following recommendations seem appropriate:

1. In states where separate organizations exist in environmental education, conservation education, and outdoor education, a summit meeting should be held between the organizations with the goal of integrating the organizations and their activities.
2. Nationally, the Conservation Education Association and the National Association of Environmental Educators should also meet with the goal of integrating organizations or at least creating a coalition for

communication between the organizations. At such a meeting, representatives from the outdoor education committee of AAHPER should be encouraged to participate.

3. Educators from the six groups must be more militant in representing their perspectives within the professional societies in which they participate.
4. National organizations should sponsor research to develop new modes of communication to reach the general educator with goals and purposes.

Clarification of Goal Statements

Reevaluation in several goal areas seemed absolutely necessary. Environmental health and zero population were not considered important goals by this study's participants. Confusion within the groups over these issues that should have the highest concern will inhibit goal attainment.

Learning activities oriented toward understanding the flora and fauna are most prevalent in the practice of all the groups represented in this study. Yet the goals which identified these ideas were ranked as inappropriate. This suggests that a discrepancy exists between theory and practice.

Because of these discrepancies, several recommendations concerning goal clarification seem appropriate:

1. The Q sort process should be applied to random samples of the groups studied to verify the results.
2. An understanding of attitudes towards population growth and environmental health among environmentally concerned citizens and professionals must be established as soon as possible.

3. Based on this understanding, national organizations and the Office of Environmental Education should adopt five year plans with priorities on population education and environmental health.
4. Man's relationship to the physical and biological environments should be translated into behavioral objectives and strategies for instructional programs.
5. The goals and objectives of practicing teachers need examination to determine if their perceptions are similar to those participating in this study.

Demographic Variables

Examining the demographic variables has revealed some interesting potential areas of study such as:

1. What undercurrent of philosophy is causing the differences on the environmentalized education goals and the environmental education goals?
2. How much does the immediate situation influence goal selection?
3. How extensive is the political inactivity of these professional groups and why are they inactive?
4. Does teaching at a variety of age levels modify goal perceptions?
5. Do environmentalists and naturalists have the same perceptions and goals?

APPENDIX A

The 180 goal statements were juried to obtain the sixty goals used in the final instrument. The thirty goals are listed by category of goal statements. The sources for the goal statements are located in the General Reference section. The asterisk indicates goals that were used in the final instrument.

Goals of Conservation Education

To act intelligently upon the basis of the best evidence.

To develop both individual and group responsibility.

To develop the ability to solve problems through an examination of evidence.

To gain experience in living out-of-doors.

To purchase and use goods and services wisely.

*To give information, habits, and attitudes conducive to health.

To develop respect for all resources, regardless of ownership, public or private.

*To get firsthand experience with small animals such as snails, frogs, harmless snakes, rabbits, and others.

To manipulate the environment for the good of human society.

*To develop interest in wild plants and how they grow.

To help students increase their appreciation of the value of natural resources in preserving and improving ways of living.

To provide opportunities for pupils to develop and improve their skills and techniques in using natural resources.

To eliminate the extravagant use and waste leading to depletion of natural resources.

*To understand that to improve present and future living, there is no substitute in science and technology for wise use and care of earth's present resources.

To utilize the collective talents of the ecologically oriented natural sciences as well as with the social sciences.

To develop emotionalized attitudes toward the natural environment and its interrelationships.

*To perceive the balance of nature in a particular habitat.

To accept responsibility for doing all he can to maintain or make wise use of resources so people now and in the future may receive maximum benefit.

*To apply the conservation philosophy to ecological principles.

To understand the processes and systems that support life.

To realize that our social and economic webs are built on restorable and nonrestorable resources.

*To understand that conservation is intelligent planning for efficient use, and not merely as saving.

To maintain the quantity and the quality of natural resources at their maximum long-term productivity.

*To know and believe that natural resources are not inexhaustible.

To increase students' appreciation and understanding of the interdependence and interrelationship of the earth's natural resources.

To enable students to develop respect for all resources, public or private.

*To develop a conservation ethic for man's use, management and development of earth's resources.

*To understand the interrelationship of man, other forms of life and the physical world.

To keep the American economy strong to withstand the great stresses of the present and the foreseeable future, and to provide a safe reserve for the future.

To know how prices and values are determined in the flexible market price system.

Goals of Ecological Education

To question all things.

*To differentiate "things" in terms of observable characteristics.

To pose hypotheses and suggest data that would be pertinent to a problem.

To search for data and their meaning.

To develop a vigorous interest in local, state, and national politics which bear heavily on ecological problems.

*To understand the significance of data for hypotheses.

*To give a definition of the science of ecology and the role of the ecologist.

*To understand that scientific knowledge is tentative, subject to change as evidence accumulates.

To have an understanding of abnormal ecology.

*To formulate and evaluate conclusions and generalizations appropriate to data.

To have an ecological ethic.

*To understand the nature of an ecosystem.

To study the relationships of the plants and animals in a whole area.

To develop scientifically literate individuals.

To understand the limits of man's ecological manipulations.

To have a basic knowledge of the socio-ecological problems of the urban environment.

To develop and implement urban planning schemes which are ecologically sound.

To have sufficient knowledge and experience to appreciate the scientific work being carried out by others.

To distinguish between scientific evidence and personal opinion.

To develop personally concerned individuals with a high competence for rational thought and action.

To apply the fundamental aspects of science in a wide range of problem situations.

To understand the relationships between science, technology, and other facets of society.

*To understand the importance of natural systems formed by organisms and environments for its own sake and the sake of man's future.

To recognize the limitations as well as the usefulness of science and technology in advancing human welfare.

*To understand that man, like all organisms, has evolved in response to the physical, chemical, and biotic components of the environment.

*To study the relationship of a species to the physical and biological factors of its environment.

*To have some basic knowledge of ecological concepts and facts.

To subvert our present economic and political system.

To develop a steady-state world system.

To adopt values similar to those that underlie science.

Goals of Environmental Education

To develop an environment conducive to leisure.

To respect our natural environment.

To encourage throughout society a perspective and attitude of informed awareness.

To understand that man is a part of nature not apart from nature.

To understand adaptive, maladaptive, and non-adaptive behavior.

To develop a sense of order among all things.

To have an understanding of pollution and overpopulation.

To carefully select and control our runaway technology.

To understand that man has the ability to manipulate and change environment.

*To reduce the world's population growth to zero.

*To work toward the maintenance and further development of diverse environments that are optimum for living.

To develop environmental solutions based on a combination of technological advancement and social change.

To develop the moral courage to act intelligently to improve the human condition.

To develop a supreme value for each human life.

*To convince the community of the necessity for constructive and perhaps radical change.

To have an understanding of pollution.

*To understand the importance of shared values.

*To recognize the conflict between our economic values and ecological principles.

To transmit complete and factual knowledge to the public about the alternative environmental consequences of existing and proposed societal activity.

*To understand that man is an inseparable part of a system, consisting of man, culture, and the biophysical environment.

To understand that man has the ability to alter a system consisting of man, culture, and the biophysical environment.

To prevent environmental deterioration.

To have a basic knowledge of the sociological problems of the urban environment.

To cause a departure from many of our present consumer and corporate behavioral patterns.

To cooperatively solve problems where economically possible.

*To make decisions based on the best available evidence after a detailed analysis of alternatives.

*To develop citizen ability and resolve to bring about effective social action.

*To make informed, concerned persons aware of how they can constructively influence social environmental policy.

*To cause a dramatic change in our values and priorities, thus our systems and institutions.

To provide a comprehensive conception of the nature of man.

Goals of Environmentalized Education

To develop a strategy for teaching/learning the whole earth.

*To learn how environments function as well as about what they consist of.

To pursue our studies in interaction with our environments rather than in detachment from them.

*To give an ecological perspective for every aspect of life.

To provide a direct encounter with the environment(s) being learned.

*To discover knowledge you never knew you had.

To facilitate learning through active exploration in a rich environment.

*To increase the understanding of the immediate environments in the context of broader environmental relationships and concerns.

*To make education environmental in essence and not merely in content.

To learn by tasting, touching, smelling, hearing, seeing, doing and feeling.

*To contribute to the quality of life, and the constructive use rather than exploitation of environments.

To foster awareness of other life and of interrelationships.

*To engage students in activities which will be of high interest to them.

To waken man's awareness of the physical, biotic, and cultural interaction which make and remake his total environment.

To insure that man's actions do not upset his life-supporting natural and human ecosystems.

*To apply all existing subject matters and disciplines to environmental function and concerns.

To accept life values and ways of living which minimize destruction and maximize those relationships that enhance life.

To increase the understanding of the nature, culture, technology, people, ideas, and feelings of the immediate environment.

To recognize the effects (good and bad) we have on physical surroundings.

*To encourage students to explore their environment without adult intervention.

*To perceive ourselves as separate rather than one with our environments.

To enhance the competence and the right of children to make significant decisions concerning their learning.

To create humanized environments in educational institutions at all levels.

To learn and develop intellectually at their own rate and style.

To guide students to the appropriate resources inside and outside the school.

To provide students alternative learning environments.

To provide alternative ways of thinking.

To help students formulate what they already know relative to the task.

To help students define what they do not know.

To make value judgments and act accordingly.

Goals of General Education

To develop creative and imaginative programs which can change the boredom of idle hours into fruitful and satisfying experiences.

*To acquire spiritual, moral and ethical values that will provide sound guidelines for personal living.

To possess a personal philosophy of his reason for existence.

To understand that freedom and responsibility go hand in hand.

*To develop an appreciation of and respect for the rights of others.

To become sensitive to the problems and circumstances prevailing other nations.

To recognize and respect differences in culture around the world and around the student's community.

To develop the ability to evaluate one's behavior and modify it when it conflicts with the moral standards of society.

To give opportunities to develop the leadership abilities.

To analyze themselves and evolve their own life style which can be modeled in the educational community and community at large.

To assure the development of youth as citizens who have self-respect, respect for others, and respect for the law.

*To preserve and extend the worth and dignity of the individual.

To appreciate one's health, welfare, and physical appearance.

*To acquire attitudes of responsible citizenship in his social, economic, and physical environment.

*To develop a commitment to common purposes above and beyond immediate selfish interests.

To provide pre-vocational and vocational experience as well as occupational guidance.

To develop skills essential for resolving broad cultural problems through reason and considered judgment.

*To possess the skills necessary for learning in any situation and to learn continuously at his own direction.

To promote the economic growth of the state.

To develop an educational program which is vitally related to the life of the community.

*To assist every individual to acquire an understanding of himself.

To develop attitudes and competencies which facilitate learning.

*To develop every individual's ability to work independently.

To use the recreational facilities of his community and state.

To supply schools with the best available instructional materials and equipment.

To purchase and use goods and services wisely.

To acquire knowledge of major arts, music literary forms, and their place in the cultural heritage.

To appreciate the scientific attitude and skill in the use of scientific problem-solving.

*To develop skills in communication, including speaking, listening, reading, writing, and viewing.

*To comprehend ideas through reading and listening.

Goals of Outdoor Education

*To enrich learning through real, direct experience.

To better understand the unity of all life.

To promote the development of aesthetic interests and appreciations.

To develop desirable practices and skills related to outdoor resources.

To develop a sense of being at home in the natural world.

To provide opportunities for pupils to develop and improve their skills and techniques in using natural resources.

To develop self-reliance.

*To understand the concepts of area, distance, and direction and learning how to read maps and use a compass.

To help the individuals become more self-reliant and secure.

To provide opportunities for the individual to strengthen his self-concept.

To develop, through working and living, experiences, a functioning sense of social responsibility.

To develop the full potential of the individual.

To develop competency in social relationships.

*To develop skills for the constructive and the creative use of leisure time.

*To provide experience shared in common by pupils and teachers to serve as a basis for mutual understanding and rapport between pupils and teachers.

*To develop a sense of pride for the historical, educational, recreational, and inspirational values that are a part of his heritage.

To develop creativeness and facility in arts and communications.

*To promote physical development.

To promote the development of civic responsibility.

*To promote the development of social relationships and individual responsibility.

To develop powers of observation and scientific thinking.

To increase the powers of reasoning and reflective thinking.

To develop personality and character for effective and ethical social learning.

To develop an understanding of school-community relationships leading to a mutual sense of responsibility and cooperation.

*To enjoy the world of nature in its beauty and variety.

To understand man's dependence on natural resources.

To understand problems of land management, particularly in the growing of food, fiber, and wood.

To learn simple principles of weather prediction.

*To learn about the geological structure of a given area and the characteristics of common rock minerals.

*To become acquainted with the plants, animals and birds in an area.

APPENDIX B

TABLES 14-21. THE RANKINGS OF THE FINAL MIDDLE FORTY GOALS

TABLE 14

THE MEAN RANKINGS OF STATEMENTS 11-15 BY ALL GROUPS

Statements 11-15	Category of Source	Ranking by Group						
		Ecological Education	Conservation Education	Outdoor Education	Environmental Education	Environmentalized Education	General Education	All Groups
To understand the nature of an ecosystem.	Ecological Education	4.4	2.5	0.5	1.2	0.4	-0.8	1.4
To understand that man, like all other organisms, has evolved in response to the physical, chemical, and biotic components of the environment.	Ecological Education	3.3	1.9	1.2	1.2	0.3	-0.4	1.3
To make decisions based on the best available evidence after a detailed analysis of alternatives.	Environmental Education	2.0	1.3	-0.7	1.9	-0.3	3.2	1.3
To make informed, concerned persons aware of how they can constructively influence social environmental policy.	Environmental Education	0.6	2.3	1.7	1.4	1.1	1.2	1.2
To enjoy the world of nature in its beauty and variety.	Outdoor Education	-0.3	1.1	3.4	0.7	1.0	0.7	1.1

TABLE 15

THE MEAN RANKINGS OF STATEMENTS 16-20 BY ALL GROUPS

Statements 16-20	Category of Source	Ranking by Group						
		Ecological Education	Conservation Education	Outdoor Education	Environmental Education	Environmentalized Education	General Education	All Groups
To understand that conservation is intelligent planning for efficient use, and not merely as saving.	Conservation Education	1.6	2.3	1.9	0.1	0.3	0.2	1.1
To promote the development of social relationships and individual responsibility.	Outdoor Education	-1.5	0.6	0.9	1.7	2.7	2.2	1.1
To understand the importance of natural systems formed by organisms and environments for its own sake and the sake of man's future.	Ecological Education	3.1	1.8	0	2.4	0	-0.9	1.1
To develop an appreciation of and respect for the rights of others.	General Education	-0.5	0.4	-0.2	1.0	2.4	3.4	1.1
To know and believe that natural resources are not inexhaustible.	Conservation Education	1.6	0.7	1.1	0.6	0	1.5	0.9

TABLE 16

THE MEAN RANKINGS OF STATEMENTS 21-25 BY ALL GROUPS

Statements 21-25	Category of Source	Ranking by Group						
		Ecological Education	Conservation Education	Outdoor Education	Environmental Education	Environmentalized Education	General Education	All Groups
To possess the skills necessary for learning in any situation and to learn continuously at his own direction.	General Education	-0.5	-1.6	1.0	0.7	2.5	3.5	0.9
To understand that to improve present and future living, there is no substitute in science and technology for wise use and care of earth's present resources.	Conservation Education	1.3	2.8	-0.5	0	0.6	0.8	0.9
To develop a commitment to common purposes above and beyond immediate selfish interests.	General Education	-1.3	0.1	-0.3	1.5	2.6	2.2	0.8
To make education environmental in essence and not merely in content.	Environmentalized Education	-0.5	0.7	1.0	2.0	2.8	-1.6	0.7
To acquire spiritual,moral and ethical values that will provide sound guidelines for personal living.	General Education	-3.4	1.8	0.7	1.9	1.5	1.5	0.7

TABLE 17

THE MEAN RANKINGS OF STATEMENTS 26-30 BY ALL GROUPS

Statements 26-30	Category of Source	Ranking by Group						
		Ecological Education	Conservation Education	Outdoor Education	Environmental Education	Environmentalized Education	General Education	All Groups
To preserve and extend the worth and dignity of the individual.	General Education	-1.9	-0.5	-0.2	-0.2	2.5	4.4	0.7
To work toward the maintenance and further development of diverse environments that are optimum for living.	Environmental Education	0.7	2.1	0.8	1.3	-0.4	-0.6	0.7
To understand that scientific knowledge is tentative subject to change as evidence accumulates.	Ecological Education	1.9	-0.7	-1.4	-0.6	0.2	2.8	0.4
To assist every individual to acquire an understanding of himself.	General Education	-2.3	-1.8	-1.5	1.0	2.3	3.9	0.2
To formulate and evaluate conclusions and generalizations appropriate to data.	Ecological Education	2.9	-0.9	-1.3	-1.3	-1.3	2.6	0.1

TABLE 18

THE MEAN RANKINGS OF STATEMENTS 31-35 BY ALL GROUPS

Statements 31-35	Category of Source	Ranking by Group						
		Ecological Education	Conservation Education	Outdoor Education	Environmental Education	Environmentalized Education	General Education	All Groups
To provide experiences shared in common by pupils and teachers to serve as a basis for mutual understanding and rapport between pupils and teachers.	Outdoor Education	-1.5	-1.8	2.6	0.9	1.2	-0.5	0.1
To develop citizen ability and resolve to bring about effective social action.	Environmental Education	-2.4	0.5	-0.9	1.7	1.2	0.8	0.1
To study the relationship of a species to the physical and biological factors of its environment.	Ecological Education	3.6	0.5	-0.6	0	-0.4	-2.6	0.1
To understand the importance of shared values.	Environmental Education	-2.1	-1.0	-1.6	0.9	2.1	0.7	-0.2
To develop skills in communication, including speaking, listening, reading, writing, and viewing.	General Education	-0.4	-0.6	-0.5	-1.7	0	2.2	-0.2

TABLE 19

THE MEAN RANKINGS OF STATEMENTS 36-40 BY ALL GROUPS

Statements 36-40	Category of Source	Ranking by Group						
		Ecological Education	Conservation Education	Outdoor Education	Environmental Education	Environmentalized Education	General Education	All Groups
To develop a sense of pride for the historical, educational, recreational, and inspirational values that are a part of his heritage.	Outdoor Education	-1.9	0	1.5	0.4	-0.3	-0.8	-0.2
To apply the conservation philosophy to ecological principles.	Conservation Education	1.6	0	0.7	-0.5	-0.1	-1.9	-0.2
To give an ecological perspective for every aspect of learning.	Environmentalized Education	-0.8	-0.8	-0.9	1.1	0.8	-1.4	-0.4
To perceive the balance of nature in a particular habitat.	Conservation Education	1.6	-0.9	0.6	-0.6	-1.2	-1.9	-0.4
To apply all existing subject matters and disciplines to environmental functions and concerns.	Environmentalized Education	-0.7	-0.7	-1.2	0.7	-0.9	-1.4	-0.4

TABLE 20

THE MEAN RANKINGS OF STATEMENTS 41-45 BY ALL GROUPS

Statements 41-45	Category of Source	Ranking by Group						
		Ecological Education	Conservation Education	Outdoor Education	Environmental Education	Environmentalized Education	General Education	All Groups
To develop skills for the constructive and creative use of leisure time.	Outdoor Education	-2.1	-1.3	3.1	-2.0	-1.9	0.7	-0.5
To understand the significance of data for hypotheses.	Ecological Education	2.3	-1.1	-2.3	-1.7	-1.9	1.4	-0.5
To develop every individual's ability to work independently.	General Education	-1.3	-2.9	-1.3	-0.5	-1.1	2.7	-0.8
To engage students in activities which will be of high interest to them.	Environmentalized Education	-2.5	-2.3	0.6	-1.0	0.2	0.5	-0.8
To cause a dramatic change in our values and priorities, thus our systems and institutions.	Environmental Education	-1.5	-0.1	-1.3	-0.5	0.1	-1.8	-0.9

TABLE 21

THE MEAN RANKINGS OF STATEMENTS 46-50 BY ALL GROUPS

Statements 46-50	Category of Source	Ranking by Group						
		Ecological Education	Conservation Education	Outdoor Education	Environmental Education	Environmentalized Education	General Education	All Groups
To give a definition of the science of ecology and the role of the ecologist.	Ecological Education	2.4	-1.7	-1.4	-1.7	-2.4	-1.7	-1.1
To encourage students to explore their environment without adult intervention.	Environmentalized Education	-2.5	-1.5	-1.2	-1.2	0.1	-0.3	-1.1
To differentiate "things" in terms of observable characteristics.	Ecological Education	0.1	-2.0	-1.8	-1.4	-2.4	0.3	-1.2
To convince the community of the necessity for constructive and perhaps radical change.	Environmental Education	-1.8	-1.5	-1.4	-1.1	-0.9	-1.3	-1.3
To comprehend ideas through reading and listening.	General Education	-0.1	-2.9	-3.5	-2.9	-2.4	2.6	-1.5

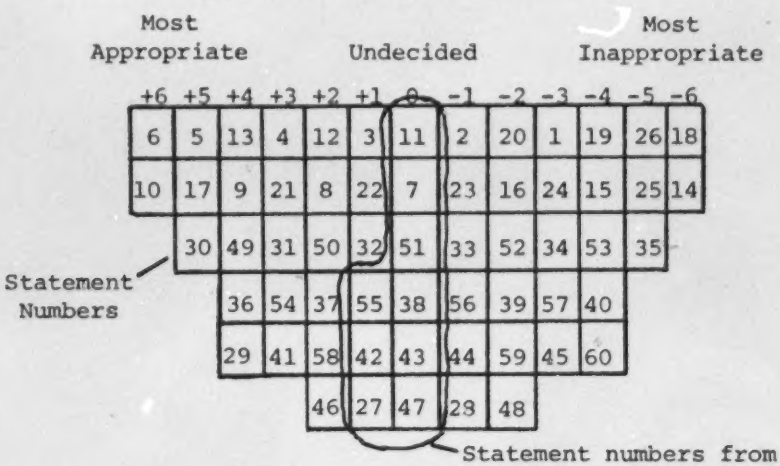
APPENDIX C

COVER LETTER, PROCEDURE FOR COMPLETING THE Q SORT, DISTRIBUTION DIAGRAM, AND PERSONAL DATA SHEET

Dear :

I appreciate your willingness to assist me in completing my research. My purpose is to establish the relationship of _____ _____ to the ubiquitous field of environmental education. From the information you give me by arranging the enclosed cards according to the directions, I will attempt to determine the uniqueness and/or overlaps within the subject matter areas surveyed.

Enclosed you will find a packet of sixty cards, an instruction sheet, and a distribution diagram. The instruction sheet will assist you in arranging the cards to complete the distribution diagram as here illustrated.



When the diagram is completed, the distribution should represent your judgment as to the appropriateness or inappropriateness of the goal statements to your area of specialization.

I hope you will find this procedure both interesting and challenging. Your completion of this task by _____ will greatly assist me.

Once again, I thank you for your cooperation. If you have any questions, do not hesitate to write or call me collect.

Sincerely,

David I. Johnson

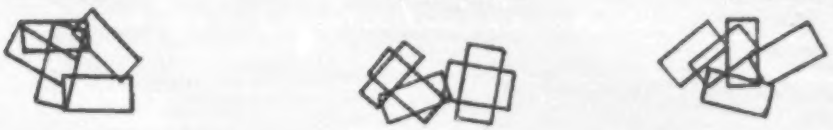
Procedure for Completing the Q Sort

Step 1) General Categorization of Goal Statements.

a. Read through the 60 goal statements and sort them into three piles:
b. Pile 1 - Those goals which are most appropriate to your subject area.
c. Pile 2 - Those goals which you are undecided about in relation to your subject area.
d. Pile 3 - Those goals which are most inappropriate to your subject area.

Place these piles in front of you in the following order:

Pile 1 | Pile 2 | Pile 3



Most Appropriate Goals | Undecided | Most Inappropriate

*Use the distribution diagram on page two to complete Steps 2, 3, and 4.

Step 2) Selecting the Most Appropriate Goals for your subject area.

a. Choose the two goal statements you feel are most appropriate to your subject area and with pencil write their numbers in the diagram under the +6 Most Appropriate column.
b. Now choose 3 more goal statements that are the next most appropriate goals to your subject and write their numbers beneath the +5 column.
c. Continue filling in the diagram with most appropriate goal statements until you exhaust Pile 1.

Step 3) Selecting the Most Inappropriate goal statements for your subject area.

a. From Pile 3, choose 2 goals that are the most inappropriate to your subject area and write their numbers under -6 in the Most Inappropriate column.

b. Write the numbers of 3 goal statements in the -5 column that are not quite as inappropriate as those in the -6 column.
c. Continue filling in the distribution diagram with goal numbers until you exhaust Pile 3.

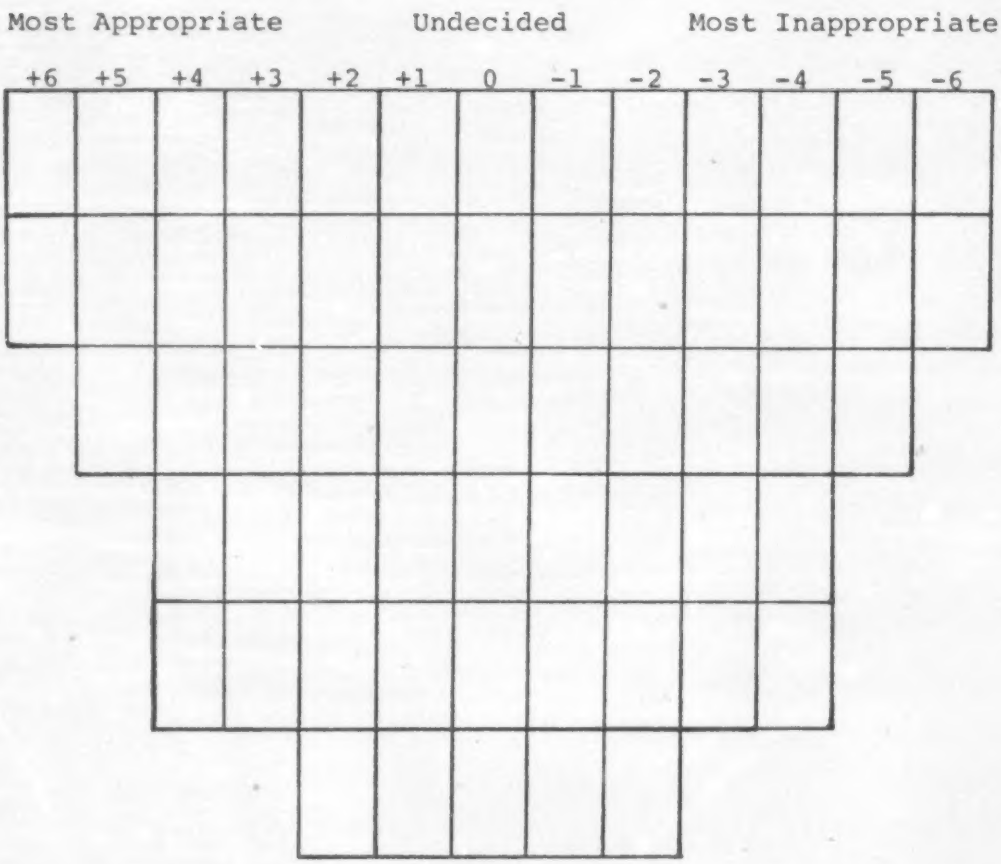
Step 4) Selecting goals from the Undecided pile.

a. Draw a box around the remaining empty spaces.
b. Lastly, record the remaining goal statement numbers in the remaining empty spaces so that when the diagram is completed, all the goal statements are ranked from most appropriate to the most inappropriate.

** Remember that you can change the order and placement of these goals whenever you wish until you are satisfied with the results. When you are done you should have numbers in all the boxes of the distribution diagram representing a range of goals from most appropriate to least appropriate.

Distribution Diagram

(Please complete this diagram in pencil.)



PERSONAL DATA

Please complete the following information about yourself:

1. Sex: Male____ Female____

2. What is your age bracket?
   20-30____ 31-40____ 41-50____ 51-60____ 61 and above____

3. Please circle the degree(s) you have earned:
   B.A. B.S. M.A. M.S. Ed.D. Ph.D.

4. With what major and minors did you graduate?

Major	Minor(s)
_____	_____
_____	_____
_____	_____
_____	_____

5. From what school did you receive your highest degree?
   _____

If you are in a teaching occupation, please answer questions 6-9.
If you are not in a teaching occupation, procede with question 10.

6. What subject(s) are you now teaching? _____
   _____

7. How many years have you been teaching? _____

8. At what levels have you taught? _____

9. What other subjects have you taught? _____
   _____

10. Do you feel your political orientation is:
    Very Liberal____ Liberal____ Moderate____
    Conservative____ Very Conservative____

11. What hobby or recreational interests do you participate in? _____

12. To what clubs, organizations or professional societies do you belong? _____

_____

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